STRATEGIC ANGLES®

M'Poyo Strategy ADVISORY

December 15, 2021

On Societal Challenges

Between Statesmanship and "Businessmanship":

A Strategic Perspective on the COP26 and the "Ecolonomics" Transition

In her distinctively neutral and soft-spoken address, Her Royal Highness Queen Elizabeth II diplomatically yet strongly encouraged the world leaders gathered in Glasgow for the COP26 to rise above the politics of the moment, and to achieve true statesmanship by answering the call of the future generations.

Similarly, business leaders might be encouraged as strongly to rise above the business of the moment, to embrace their purpose-driven mandate extension, and to fulfill the strategic purpose of business i.e., shaping its legacy to the world. That might be called "businessmanship". And, with 41 of the 2020 World Top 100 economies being corporations, the macroeconomic responsibility of business is right before our eyes.

Ultimately, the two weeks between UN Secretary General Guterres' *'Make or Break'* speech urging countries to the highest level of climate ambition, President Obama's emphasis on the work yet to be done, and the final agreement resulted in a rather narrow spectrum of opinions on the COP26 outcome. Indeed, on one hand, the most ambitious —or the most urgency-sensitive— tended to see the glass half-empty while, on the other hand, the moderately ambitious —or the more politically realist— saw the glass half-full… with very few opinions kept in the middle.

As far as I am concerned, I have deliberately ignored the glass and have kept my focus on strategic issues beyond the environmental, financial, and technological challenges of the 1.5°C temperature increase, climate finance and the support to emerging economies and developing countries respectively.

And if the COP26 *"recognizes the importance of the best available science for effective climate action and policymaking"*, **I believe that the best available strategic science might insightfully help think forward and advance the climate agenda**.

Beyond that, I see three overarching strategic issues whose answers might profoundly impact what I call the **"Ecolonomics Transition"** i.e., the balanced economic and ecologic transition. These questions revolve around the strategic framework of the transition, the opportunity to rethink our approach towards the use of energy sources throughout the transition, and the nature of the post-transition economy.

1. An Organic Growth Strategy Perspective on the 'Charcoal-Grey-to-Green' (Grey-to-Green) Ecolonomics Transition

The Organic Growth Framework

In my article *"Leading the Strategic Complexity of Growth"*, I highlighted that growth strategy mastery implies mastery of the growth strategy paradox and the growth of the firm's business model dimensions.

In this context, **overcoming the three-fold complexity of the growth strategy paradox** i.e., the strategic tension between the further exploitation of a firm's current sources of strategic advantage and the exploration of new market opportunities, **provides us with a strategic prism to look through to gain an understanding of the underlying dynamics of the *Grey-to-Green "Ecolonomics Transition"* unfolding before our eyes**.

Indeed, firstly, exploitation and exploration respond to different strategic, operational, organizational, and capabilities logics in a similar fashion as the traditional "Oil & Coal, Grey Economy" and the "Clean & Green Economy" respond to different logics.

Secondly, exploitation and exploration need to be kept in a *"dynamic perfect imbalance"* that strategically fits current market conditions and forthcoming market evolutions. Considering there is no such a thing as a perfect 50/50 opportunity split between the old and the future, firms might need to fine-tune their Exploitation/Exploration cursor at 70/30, 40/60, or 90/10 or whichever imbalance perfectly works for them according to the industry dynamics. Hence the notion of *"dynamic perfect imbalance"*.

Finally, I also highlighted that the growth paradox tension might lead a firm to deconstruct —and reconstruct differently— its own business model in the face of competitive advantage obsolescence or fierce fight for strategic relevance.

Applying The Growth Framework to the Grey-to-Green Transition

In the light of these elements, the *'Grey-to-Green Ecolonomics Transition'* is undoubtedly a case in point of the strategic complexity of growth in general, and of the growth strategy paradox in particular.

Aimed at phasing out and ultimately replacing the grey economy by the clean and green economy, the *Grey-to-Green Ecolonomics Transition* highlights the strategic tension between further exploiting the strategic benefits of the grey economy —i.e., continuing to fuel the global economy and society with oil and coal— and exploring new industrial, technological, and financial opportunities to bring the green economy to life.

Consequently, we are going to navigate between the grey economic paradigm of the past and the present and the green *ecolonomics* paradigm of the future in a similar fashion as corporations looking for new growth avenues keep oscillating between exploitation and exploration.

Finally, today, we have arrived at a stage where we need to deconstruct our global economic model and reconstruct it according to the strategic sense of history. Indeed, while we might economically perpetuate the global oil and coal economic model, this latter might have arrived at a point of societal irrelevance and environmental obsolescence in the light of the global environmental stakes in the same way some firms may be confronted with the danger of strategic obsolescence or irrelevance.

THE STRATEGIC IMPLICATIONS FOR THE WORLD ECONOMY

A Strategic Transition

We must bear in mind that the grey-to-green transition is just that: a transition, not an overnight miracle. As a result, we need to define a strategic trajectory for the global economy resting on the dynamic perfect imbalance between the grey and green economies.

From activists to environmentally impatient citizens, customers, investors, and institutions, many voices advocate for a rapid, short-term transition from grey to green, not to say a direct shift. This seems an unrealistic demand and a potentially risky approach for two reasons. First, in some instances, we must address two centuries of negative externalities that cannot be "reverse engineered" overnight. Second, if we want to transition from one form of global economy to the next one, we must keep the first form alive in the first place —yet with innovative adjustments— while transitioning.

This may appear both controversial and counterintuitive in the light of the environmental stakes at hand, but sometimes one must master the imperfections of the world before striving to make it perfect, be it through radical innovation. As a matter of fact, the global economy is currently a grey energy-based economic model and, to evolve towards this highly desired *ecolonomics* model, we will still need to continue meeting the energy demand along the way. Hence, just "killing" overnight the grey energy-providing companies does

not appear as the ideal solution, even less so when considering their economic performance could subsidize the investment that will accelerate the establishment of the clean and green *ecolonomics*. That said, this does not prevent from playing on multiple fronts simultaneously by further investing in the clean and renewable economy.

Altogether, the trade-off between further exploitation and exploration will evolve towards a trade-off between gradual extinction and exploration but we will need to be collectively smart about the evolving dynamic perfect imbalance between the grey and green economic paradigms to achieve a successful grey-to-green *ecolonomics* transition.

Ultimately, although the environmental impatience may be justified by the wellbeing of the planet, smart timing will be of the essence.

A Dynamic Demand & Supply Management

The supply and demand equation is an ancestral fundamental of the economic theory. However, over the last decades, we have stopped counting the hours of late-night geopolitical negotiations on the supply side of the energy equation and their immediate impact on energy prices.

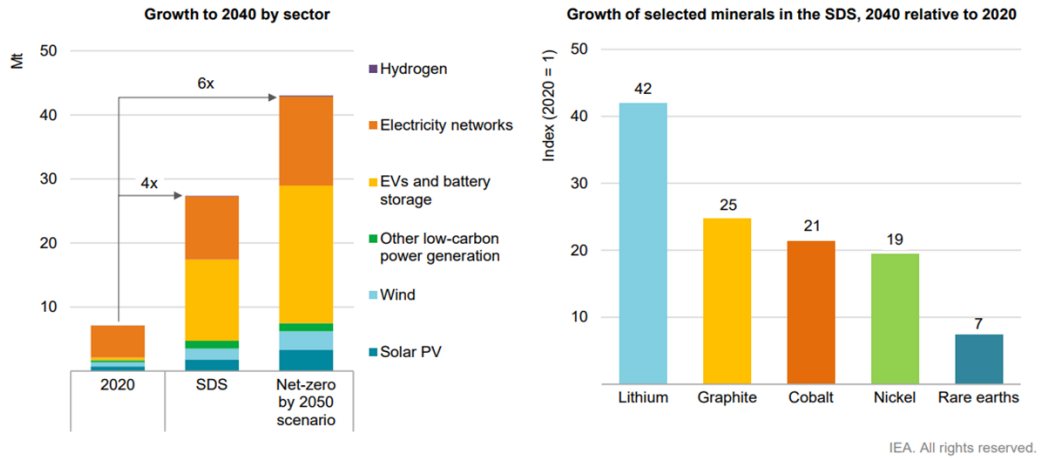
Thinking forward and projecting ourselves into the transition and beyond, the management of the energy supply and demand equation might grow in complexity as we will have to jointly manage two inversely oriented and distinctively paced economic paradigms, with the declining grey economic paradigm on one hand, and the growing and increasingly greener *ecolonomics* paradigm on the other hand.

Furthermore, beyond the two-speed character of the transition, the underlying, evolving availability and affordability of critical minerals that will dictate the dynamic imbalance of green and grey throughout the transition will further add to the complexity of supply and demand management.

Ecologically speaking, the ecolonomics might, at least in the short term, be marked by a mismatch between the global climate ambitions and the global availability of some of the minerals considered essential such as lithium, copper, cobalt, nickel, manganese, or graphite. This calls for an even more proactive management of supply and demand.

Indeed, in its report *"The Role of Critical Minerals in the Clean Energy Transition"* presented on May 5, 2021, the International Energy Agency (IEA) forecasts an increase in the aggregate demand for all critical minerals by a factor of four to meet the UN Sustainable Development Goals, and by a factor of six to meet the 2050 Net-Zero objectives.

Mineral demand for clean energy technologies by scenario



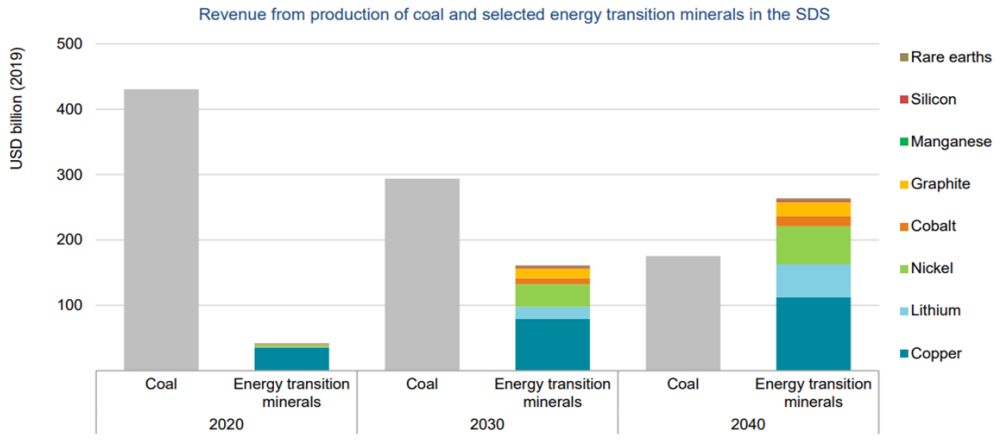
Notes: Mt = million tonnes. Includes all minerals in the scope of this report, but does not include steel and aluminium. See Annex for a full list of minerals.

Source: INTERNATIONAL ENERGY AGENCY, *World Energy Outlook Special Report: The Role of Critical Minerals in Clean Energy Transitions, p9 ; May 2021.* www.iea.org

When analyzing minerals individually, figures are nothing but environmentally astronomic. The Lithium demand is expected to experience a 42-multiple to meet the UN SDGs but this forecast skyrockets to a 70+-multiple in a successful Net-Zero scenario while the IEA's forecast for cobalt demand multiple amounts to 21, all this by 2040… whereas the UN SDGs' current deadline is 2030.

Economically speaking, global mineral availability and affordability will be key variables of the ecolonomics supply and demand equation. However, the contrasted visibility on the revenue and cost components of the forthcoming *ecolonomics* paradigm suggests we might not only need to carefully manage supply but also to proactively manage demand in order to ensure the overall equilibrium of the system.

Indeed, the transition is expected to gradually reverse the grey-to-green ratio of revenue generation, from a 10+ to 1 in favor of the grey today to a 1.4 to 1 in favor of the green by 2040. This highlights a potential two-phase trajectory of financial support to the green *ecolonomics* characterized by a first pluriannual phase of "grey subsidization" of green technological investments impacting the availability of critical minerals, followed by a longer term second phase of "green self-sufficiency".



Notes: Revenue for energy transition minerals includes only the volume required in clean energy technologies, not total demand. Future prices for coal are projected equilibrium prices in *WEO 2020* SDS. Prices for energy transition minerals are based on conservative assumptions about future price trends (moderate growth of around 10-20% from today's levels).

Source: **INTERNATIONAL ENERGY AGENCY**, *World Energy Outlook Special Report: The Role of Critical Minerals in Clean Energy Transitions, p10 ; May 2021.* www.iea.org

On the cost side of the equation, while the IEA expects economies of scale along the way, we believe that forecasting their time of materialization is challenging at this stage, considering the minerals-dependent cost structure of some of the key elements of the emerging clean and green paradigm —e.g. batteries— and the technological requirements to achieve these economies of scale. Copper, for instance, whose incremental cost forecast (IEA) over the next two decades could amount to USD 0.5 trillion, provides us with an example of the order of magnitude we will have to deal with.

On top of that, the geographic concentration of minerals sources, the geopolitical risks, the supply chain complexity, and trade regulations might add a certain price volatility to the equation, which would further incite to manage supply and demand intelligently and dynamically.

The Short-Term Innovation Paradox of the "Oil & Coal Industries"

The grey-to-green *ecolonomics* transition and its programmed decline of the "grey energy economy" leaves CEOs and executive leadership teams of the oil and coal, fossil fuel, and hydrocarbons industries with a once-in-corporate-history strategic innovation challenge.

Indeed, traditionally, innovation has always been long-term and growth-oriented, and continuity-driven i.e., aimed at finding new growth avenues and perpetuating firms' longevity in the competitive landscape. Similarly, grey energy industries, traditionally characterized by 15- to 20+-year business cycles, and heavy, long-term investment projects, have always inscribed themselves in a very long-term perspective.

Today, the paradox of this transition is that grey energy industries' forthcoming innovation is short-term oriented and motivated by a final discontinuity of business. In other words, grey energy industries will be expected to achieve their fastest paced, and highest level of innovation but only to responsibly accelerate their own extinction, and thereby help the world achieve its planet protection ambitions. Simultaneously, these short-term innovations should not be too heavy financially in order to allow "declining" grey energy companies to play their subsidization role as investors of their cleaner and greener counterparts.

Moving forward, while the far-reaching strategic implications of this paradox are clear, its implementation roadmap and the time of completion remain to be defined in the light of the anticipated operational complexity of this transition process.

Ultimately, considering we have yet to come up with some of the technological solutions allowing to execute the transition agenda effectively and efficiently, I believe we may not exclude the risk to reconsider some of the globally settled deadlines for the global climate ambitions of the 21st century.

2. A Corporate/Portfolio Strategy Approach for the Technological Solutions of the Ecolonomics

In the forthcoming *ecolonomics*, the multiple usages and expected variability of critical minerals across clean and green technologies suggest that opting for a corporate portfolio strategy approach of minerals might be more relevant than an individual resource management.

Critical mineral needs for clean energy technologies

	Copper	Cobalt	Nickel	Lithium	REEs	Chromium	Zinc	PGMs	Aluminium*
Solar PV	●	○	○	○	○	○	○	○	●
Wind	●	○	◉	○	●	◉	●	○	◉
Hydro	◉	○	○	○	○	◉	◉	○	◉
CSP	◉	○	◉	○	○	●	◉	○	●
Bioenergy	●	○	○	○	○	○	◉	○	◉
Geothermal	○	○	●	○	○	●	○	○	○
Nuclear	◉	○	◉	○	○	◉	○	○	○
Electricity networks	●	○	○	○	○	○	○	○	●
EVs and battery storage	●	●	●	●	●	○	○	○	●
Hydrogen	○	○	●	○	◉	○	○	●	◉

Notes: Shading indicates the relative importance of minerals for a particular clean energy technology (● = high; ◉ = moderate; ○ = low), which are discussed in their respective sections in this chapter. CSP = concentrating solar power; PGM = platinum group metals.

* In this report, aluminium demand is assessed for electricity networks only and is not included in the aggregate demand projections.

Source: INTERNATIONAL ENERGY AGENCY, *World Energy Outlook Special Report: The Role of Critical Minerals in Clean Energy Transitions*, p45 ; May 2021. www.iea.org

That said, this raises a critical question: "In such a corporate strategy approach, who would play the Corporate Center role?" In other words, could we or should we think of an international organization, probably a "hybrid" supranational "supracorporate" institution aimed at helping manage the set of critical minerals globally, strategically, economically, and environmentally? It is an open question.

3. From Grey to Green. OK, Nice Change of Colors, BUT… Aren't We Just Moving from a Global Extraction Economy to… Another One? From the Oil & Gas to the Metals & Mining Era?

Very often, asking the question is already giving the answer. So, after the twenty-sixth edition of the multilateral agreement for a better planet, three overarching yet not really put forward questions remain. Once again, I unapologetically raise them from a strategic perspective while acknowledging I am not an environmental expert.

- **The Overarching Question:** Beyond the nice grey-to-green phonetics, aren't we just moving from one global extraction economy to the next one?
- **The Economic Question:** Will the *ecolonomics* only be a clean and green version of its grey paradigm predecessor whose energy raw materials will have been replaced but not its underlying economic fundamentals?
- **The Environmental Question: Ultimately, to what extent will the planet really be better off?** This might look like a controversial question. It might even look like a question going against the sense of the history-in-the-making. Nevertheless, I believe it is of utmost importance to keep it in mind to avoid repeating the mistakes of the past and merely changing the color of externalities.

  Looking at the situation from a basic 'production–consumption–disposal/recycling' lifecycle perspective might provide us with a starting point of answer.

  On one hand, we might reasonably assume that the net impact of the emerging much more responsible forms of consumption together with recycling and waste management technological advancements will make the planet better off. On the other hand, to the best of our knowledge today, I believe the situation might be slightly more contrasted on the production part of the lifecycle. Indeed, provided extraction technological innovation works globally as effectively as anticipated, we might well be better off.

  However, when considering the forecasted extraction multiple of some of the most critical minerals range from 20 to 70+ only to meet the expected demand of the UN 2030 Sustainable Development Goals or the 2050 Net-Zero climate ambition, we are obliged to ask ourselves whether the gains in consumption, recycling, and disposal will not be —at least partially offset by potential new forms of externalities in production. Thinking forward, what about the second half of the century and beyond?

Additionally, considering we are still at an early stage of this emerging *ecolonomics* paradigm, I believe we need to ask ourselves whether the technologies we are currently developing are the best ones either intrinsically or for the planet. For example, when it comes to mobility, are electric vehicles (EVs) and storage batteries the very best mobility technologies? Beyond the momentum gained by electric vehicles —and beyond the stratospheric market capitalization of a firm like Tesla— I believe it is still an open question especially when considering EVs/Batteries are the most mineral-intensive technology as they consume copper, cobalt, nickel, lithium, rare earth elements, and aluminum. So, from an extraction standpoint, and according to the long-term availability of these minerals; will the natural equilibrium of the planet be relatively better off than it is today?

Ultimately, among the dynamic perfect imbalance between green and grey, the short-term strategic innovation paradox, the crucial issue of dynamic supply and demand management, and the definition of the fundamentals of the emerging ecolonomics, the green-to-grey transition leaves us with critical open questions.

And while financial capital, and industrial innovation certainly provide some of the answers, they will need an enlightened direction, a direction decided between statesmanship and *businessmanship* that will pave the way for the sound, balanced, and prosperous ecolonomics of the future.

Feedbacks and comments can be shared at: contact@mpoyostrategy.com