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In search of shared benefits: Europe and Africa in a global green transition

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Relations between the European Union (EU) and Africa take place in a difficult geopolitical environment. Changing global dynamics are leading the EU to reconsider its energy partnerships and industrial supply chain vulnerabilities and more assertively decarbonise its economy. African countries, on the other hand, prioritise climate resilience through economic development, industrialisation and regional integration and see major risks to their economic development in a carbon-constrained environment dominated by big-power competition.

The different starting points for the EU and African countries, however, may also create new opportunities for cooperation. As both try to catch up in the areas of green tech and industrialisation respectively, the EU arguably has a strategic interest in African economic development as it also seeks African resource partnerships in the continent. This paper makes a case for deeper and more mutually beneficial partnerships between the EU and African countries. This should be built from the bottom up through priority investments in mineral processing, manufacturing and industrialisation more broadly, as well as skills development and technology transfer for new green industrial value chains.

EU-Africa collaboration must respond to the different development and industrialisation objectives of African countries, as well as the specific transition risks they face. The EU will also need to show that its green investments can create new opportunities for African economic transformation, including greater value addition and job creation.

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Acronyms

AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
AU	African Union
CBAM	Carbon Border Adjustment Mechanism
CCUS	Carbon capture utilisation and storage
CRM	Critical raw material
DRC	Democratic Republic of the Congo
EC	European Commission
ECDPM	European Centre for Development Policy Management
EGD	European Green Deal
EU	European Union
EV	Electric vehicle
GDIP	Green Deal Industrial Plan
IEA	International Energy Agency
IRA	Inflation Reduction Act
LDC	Least developed country
MIC	Middle-income country
SDG	Sustainable Development Goal
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
US	United States
WTO	World Trade Organization

1. Introduction

The European Union (EU) plays a lead role in addressing the climate crisis. It has set itself an ambitious deadline to decarbonise its economy and is at the forefront of collective action in the multilateral system. At the same time, European climate and energy diplomacy is met with scepticism across the Global South, including in African countries (Dennison and Engström 2023; Mbiyozo 2022; Worley 2023). Many see the EU's unilateral green trade and investment measures as a direct threat to their economic development, and fear being excluded from new opportunities as major powers seek to outcompete one another to dominate in new green technology value chains.

This is exacerbated by recent EU policy shifts since the Russian invasion of Ukraine. The war has changed the way in which the EU looks at its **energy security**. The bloc also aims to reduce its dependence on China to ensure **supply chain security** as it seeks to close the gap with China and **compete** with the US in the market for clean technologies. These global triggers have led to a number of policy shifts to protect European interests in a more adversarial international environment. While this more strategic and proactive EU approach can propel the continent's own transition forward, it also risks undermining wider partnerships, including with the Global South.

African countries are seeking ways to accelerate their own **economic development** and industrialisation, while strengthening their **climate resilience**. In order to achieve economic transformation towards more and better jobs, with greater value addition within the continent, African countries need to radically expand energy supply and access, ideally while staying within planetary boundaries. This in itself is a difficult balancing act. However, in the current geopolitical environment, they risk becoming collateral damage even if they hold a number of critical (mineral) assets for a global green transition.

While the EU and Africa refer to common goals, their starting point remains very different, in turn leading to persistent tensions. These relate to a perceived lack of African **agency** especially in the global subsidy race, the optics of a unilateral EU **approach** and externalisation of its climate agenda, and the **scale** of climate and other finance in comparison to African needs.

As both the EU and African countries are trying to catch up in the fields of clean tech and industrialisation respectively, there is an opportunity for more strategic cooperation, built on mutual interests and creating shared benefits. EU-Africa cooperation has the potential to redraw energy geographies and industrial value chains, by moving away from energy and supply chain dependence on Russia and China, respectively, and forging stronger partnerships with Africa. Doing so can help overcome some of the existing hurdles in EU-Africa cooperation by connecting the EU's objective of an energy-secure and high-performing green economy with Africa's objective of climate-resilient economic development.

The paper concludes that for the EU-Africa partnership to credibly deliver on stated objectives some changes are needed. This includes (1) reframing and scaling up strategic investment in technology, research and innovation for African green industries, particularly for regional markets; (2) respecting African agency and priorities for economic development, while avoiding instrumentalising African resources in support of an inward-looking European transition; and (3) a multi-paced and geographically differentiated approach which takes account of existing industries, enabling factors and the specific interests and constraints of African economies.

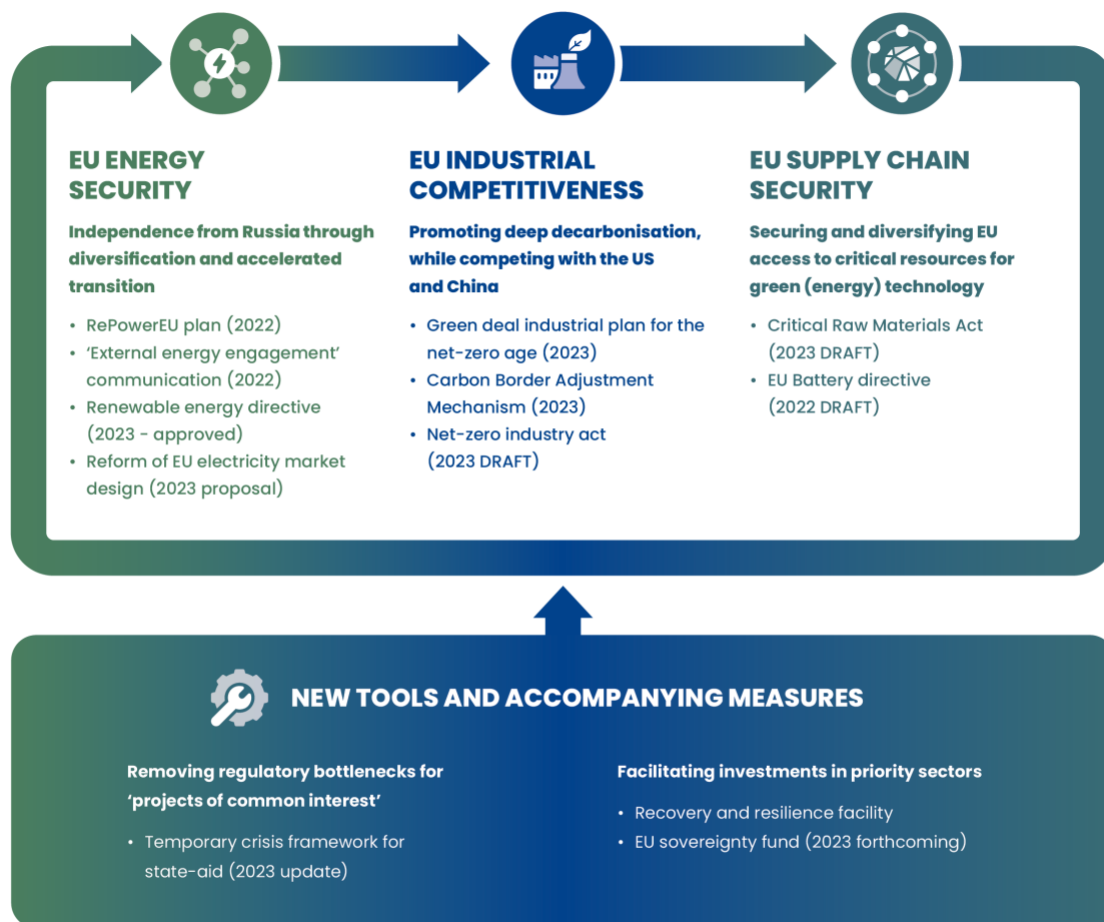
2. The EU's green ambition faced with energy crisis and geopolitical tensions

The EU seeks to promote its own green transition while nudging the rest of the world to follow suit. The external dimension of the European Green Deal (EGD), launched in 2019, is in many ways modelled on the same instruments that the EU uses for its internal market, combining regulatory power - changing behaviour by setting targets, standards, and increasing the costs of emissions (Byiers et al. 2023a), and public and private finance - providing funding and incentives for businesses and authorities to make greener choices (Di Ciommo and Ahairwe 2021).

While the COVID-19 pandemic put pressure on the EU's finances, the events since the February 2022 Russian invasion in Ukraine have arguably had a greater effect on the EU's green transition objectives. The war caused an energy supply crisis in the EU, and pushed European countries to rapidly diversify their natural gas supply away from Russia and accelerate their energy transition. It also served as a rude awakening to the risks of the EU's overdependence on countries that do not share its values for critical energy and industrial supply chains. In parallel, deteriorating relations between the United States (US) and China, and a more forceful US decarbonisation agenda have led the EU to reconsider the pace as well as the tools of its own transition in the face of what it sees as distortionary subsidies.

This rapid succession of external triggers led to three major ongoing policy shifts linked to the EU's internal green transition, all of which come with potential spillovers and risks for African economies (see figure 1). These measures show that as the EU adapts to a more volatile external environment, it is also willing to change the rules of the single market when it comes to energy transition and decarbonisation, with implications beyond its borders.

Figure 1: EU Policy shifts since the Russian invasion of Ukraine



Source: Authors

2.1. Energy security and (renewable) energy sovereignty

The Russian war in Ukraine led to a shift in thinking on European energy security, with a series of new measures to make the EU's energy systems more resilient to external shocks. Under the name of REPowerEU, the EU seeks to not only diversify its natural gas supply away from Russia, but also accelerate the EU's energy transition by reducing regulatory bottlenecks and allocating resources (Iacobuță and Faus Onbargi 2022). In less than 18 months, the EU bloc reduced its dependence on Russian gas from 40% to 8% (Gavin and Jack 2023). New supplies were led by the USA, the UAE and Qatar. African energy exports only increased very moderately in real volumes (Zachmann et al. 2023), with new deals primarily targeting existing suppliers Algeria and Egypt (Dennison et al. 2022).

The energy crisis delayed the coal and nuclear phaseouts in several European countries. Nevertheless, there are signs that the EU's renewable energy transition, while slow, remains largely on track,¹ with a return to coal phase-out expected from 2024 onwards (IEA 2022a; Messad 2022). This was reconfirmed with a recent political agreement

¹ The EU's total natural gas consumption in the winter of 2022-23 decreased by nearly 20% compared to the previous year (Eurostat 2023), while wind and solar generated 22% of the EU's electricity in 2022, more than with natural gas (Jones 2022).

on the EU's renewable energy directive, which introduces a legally binding target of 42.5% of renewable energy in the EU's overall energy consumption by 2030 (Simon 2023).

The EU's renewed concept of 'energy sovereignty' therefore relies on a transition to renewable energy. While the EU's decoupling from Russia opened the door for new energy partnerships, including with North African countries (El Katiri 2023), long-term opportunities may be less linked to natural gas and more to electricity interconnections and renewable hydrogen, implying a wider set of potential partners, including in Africa (Medinilla 2022).

2.2. Industrial competitiveness and green subsidies

The August 2022 US Inflation Reduction Act ushered in a new era of green competition. New US subsidies and tax credits, conditional on US-based production and sourcing (e.g. of electric vehicle batteries), directly compete with European interests. Concerns that European companies might relocate part of their production to the US triggered a rapid response by the EU.²

In February 2023, the EU announced its own Green Deal Industrial Plan (GDIP) for the net-zero age (EC 2023a), which proposes a series of measures to strengthen the EU's industrial competitiveness while speeding up its green transition. In essence, the GDIP seeks to create a more conducive regulatory environment for green investment but also directly support EU production by relaxing state aid rules (including the option of matching foreign subsidies),³ deploying an EU sovereignty fund, leveraging international trade, and investing in skills development.

The full effects of the US and EU joining a green subsidy race remain uncertain. The GDIP nevertheless illustrates that external pressure can lead the EU to move away from its strict competition policies of the past and embrace a more proactive state support to shape its green industrial sectors. Some analysts suggest that this may lead to further concentration of industrial opportunities, creating additional barriers for developing economies in the Global South to innovate and develop clean industrial production (Tilman et al. 2023; Conley 2023).

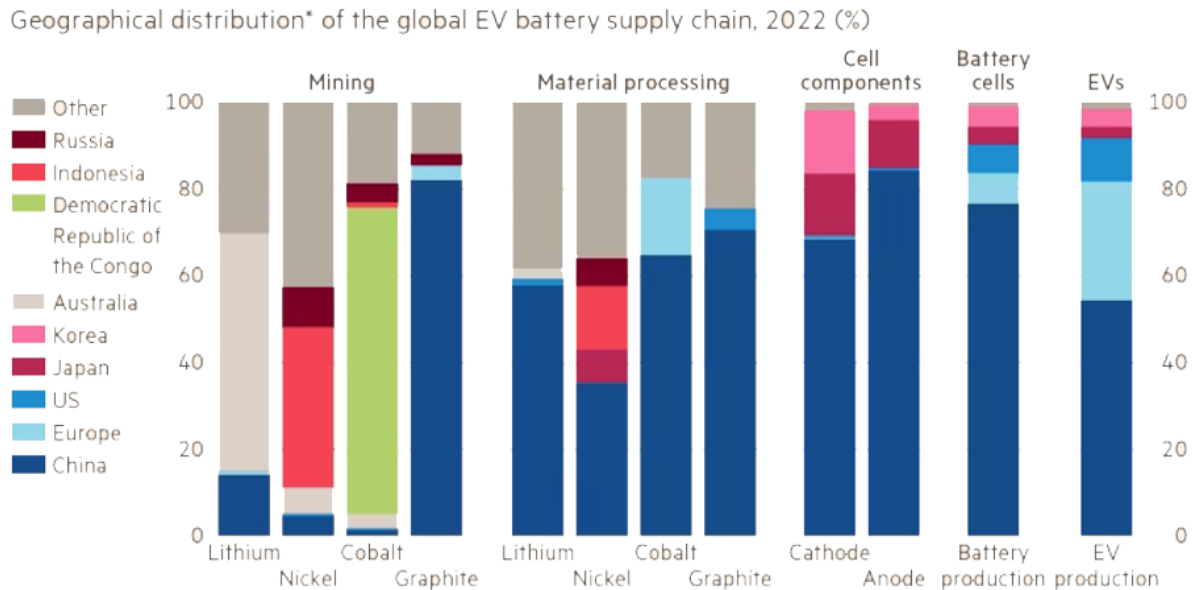
2.3. Access to critical raw materials (CRMs) for the green transition

Beyond the energy crisis, supply chain disruptions linked to Chinese COVID-19 lockdowns illustrated the EU's overdependence on China for key industrial and mineral supply chains, triggering a shift in how the EU and its member states assess supply chain risks for their green and digital technology sectors (Noyan 2023). Taking electric vehicles as a proxy, figure 2 below shows that China dominates the mining as well as the production of green inputs for green industries. The EU is increasingly concerned with the Chinese dominance of these supply chains, as it risks "replacing one dependency with another" in the switch from fossil fuels to renewables (Yang et al. 2023).

² In February 2023, for example, Tesla announced it would scale back battery production in Germany in favour of the US in order to benefit from the Inflation Reduction Act (IRA) incentives (Waldersee 2023), while several European automotive and energy companies have also announced plans to set up manufacturing in the US (Wessner and Khemka 2023).

³ Several member states have fundamentally limited fiscal space to subsidise their industries, which explains why 77% of the state aid under the temporary crisis and transition framework so far has been supplied by Germany (53%) and France (24%) (Marshall 2023).

Figure 2: Geographical distribution of the global electric vehicle battery supply chain, 2022 (%)



Note: Percentages for mining and electric vehicle (EV) output based on actual production, all others based on production capacity

Source: Dempsey and Cotterill 2023

The March 2023 draft Critical Raw Materials Act (EC 2023b) lists 34 minerals that are considered strategic as critical inputs for the EU’s priority industries, including solar and wind power infrastructure, battery production, electrolysers, heat pumps, electric motors and carbon capture utilisation and storage (CCUS). For the first time, the European Commission (EC) also proposed non-binding targets to ramp up the EU’s own production and processing capacity to achieve the following goals relative to EU total CRM consumption:

- 10% extracted in the EU
- 40% processed in the EU
- 15% from recycling
- No more than 65% of any CRM sourced from a single country

The EC also seeks to create an alternative mineral supply chain through new CRM strategic partnerships⁴ and what it calls a CRM club, “bringing together consuming and resource-rich countries” to promote mutually beneficial raw material value chains (EC 2023c).

Negotiations on the CRM regulation are ongoing. The targets and initiatives to diversify the EU’s mineral supply away from China may create new opportunities, especially if they can unlock significant priority investments into value addition and industrialisation. African countries hold significant reserves of rare earth metals, battery minerals, and other CRMs (Carrara et al. 2023) that, in light of projected demand, can play an important role in diversifying industrial supply chains. Yet, as discussed below, the targets for on-shoring production, processing, and recycling may also conflict with the industrialisation interests of African countries.

⁴ The EU already signed such strategic partnerships with Canada, Ukraine, Kazakhstan and Namibia (EC 2023).

Box 1: EU policies seen from the outside

Observers in the Global South often see the EU's external climate policies as a risk or even a threat to their economic development objectives. Most visible has been the vocal opposition to the EU's advocacy to end overseas fossil fuel finance, which is seen as a deeply unfair measure with potential negative consequences (Moore and Ramachandran 2021; Moore and Moss 2022).⁵

The externalisation of the EU's 'green regulatory regime', and the Carbon Border Adjustment Mechanism (CBAM) in particular, has been met with significant opposition, eliciting accusations of regulatory imperialism (Moens and Mathieson 2023). Many also see the CBAM as a protectionist measure, limiting non-EU producers' access to the EU market for key industrial products, while other measures, like the regulation on deforestation-free products (EC 2023d), are seen as unfair non-trade barriers and an additional burden for producers that are already under pressure from climate change and market volatility (Byiers et al. 2023a).

The EU's shift in industrial policy may create further future tensions. Since the 1980s, developing countries have been persuaded to de-emphasise the transformative role of industrial policies through structural adjustment programmes and external support (Said 2021), while industrial policies were seen as a wasteful use of taxpayer and development cooperation money. Most late industrialising economies are unlikely to be able to compete in a global subsidy race to develop green industries due to limited fiscal space and state capabilities and, therefore, risk being largely excluded from the economic benefits of a global green transition. This may further deepen negative perceptions of Western and European decarbonisation agendas.

3. African development in a carbon-constrained environment

The above dynamics contribute to shaping the environment in which African countries operate. As countries seek to unlock their economic development through industrialisation, regional integration and the African Continental Free Trade Area (AfCFTA), many are also positioning themselves to be part of a global green economy. Governments seek to leverage their natural resources, including minerals and energy, from fossil and renewable sources alike to position themselves more prominently in changing global value chains. Many also proactively position themselves as emerging clean energy hubs and future green manufacturing centres. Yet operating in an increasingly carbon-constrained international environment comes with specific challenges, especially when the pace and terms of a green transition are largely set outside the continent. To promote economic transformation, with higher value addition with more and better jobs, African countries need to increase and widen their access to energy, finance and technologies, and improve human and institutional resources. The challenges to doing so are further increased by the wider global shifts discussed above.

3.1. Climate resilience and economic development

The ability of countries to manage shocks is an important indicator of their economic performance. Richer countries tend to recover faster than poorer ones, further widening the gap between them (Chandy 2023). Unlike in advanced economies, economic activity in Africa is yet to recover from the COVID-19 pandemic, further undermined by, among other things, rising climate vulnerability (UNDESA 2023). With climate shocks on the rise, countries need economic development to build their resilience, as well as an adapted growth model, especially for heavily climate-dependent sectors such as agriculture. Hence, as a region that is especially vulnerable to the risks of climate change, **climate-resilient economic development** is a key objective for most African countries and it is at the core of the African Union's climate strategy (AU 2022).

⁵ In 2022, the EU's search for alternative supplies of natural gas is perceived by many as a sign of hypocrisy (Gbadamosi 2022; Museveni 2022), even if its net consumption significantly reduced around the same time (Tooze 2023a).

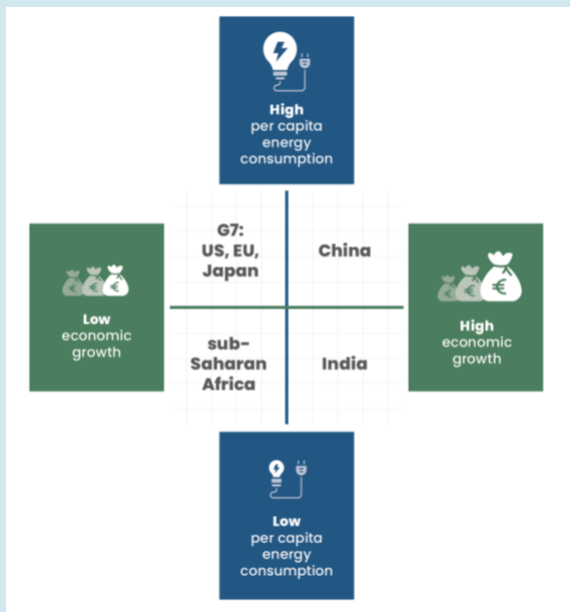
African countries face the dual challenge of industrialising while keeping their emissions in check. Historically, economic development through industrialisation has gone hand in hand with increasing greenhouse gas and other emissions (Byiers et al. 2023a) Yet technological upgrading is associated with lower emissions (Avenyo and Tregenna 2022). Low-emission and inclusive industrialisation is also identified as a key priority by the African Union (AU) (AU 2022). Given that most African countries currently have a relatively high carbon intensity of industrial activity (de Melo and Solleder 2022), industrialisation must also entail a systematic upgrading of the value chains in which they currently participate. This calls for an industrialisation process based on innovation, technology and knowledge transfer.

Though industrialisation is a longstanding priority, the relative contribution of the manufacturing sector to African economies declined in the past, with ‘deindustrialisation and deagrarianisation’ since the 1980s (Oks and Williams 2021). The manufacturing sector, key for economic transformation towards better and higher productivity employment, has suffered from systematic low performance and output linked to a wide range of external and internal factors (Ibid.)

Box 2: Access to energy as a missing link for climate resilience

Access to energy is a structural bottleneck for African industrialisation and economic development (Acheampong 2021). For many African countries, the main challenge is to increase access to energy for both industries and households, rather than energy transition.⁶ Sub-Saharan African countries experience both low energy consumption and low economic growth (see figure 2), whereas both are critical to build up resilience to external shocks, including those triggered by climate change.

Figure 3: Distinguishing between different regions for climate considerations



Source: adapted from Tooze 2023b

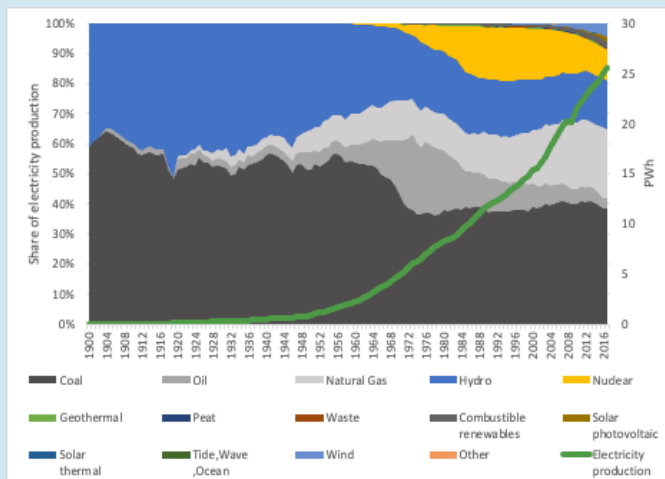
In 2020, Africa accounted for 16% of the global population, but only 6% of the global energy, and 3% of electricity demand (Vigotti 2020). For a population that is more than twice that of Europe, according to data from the IEA, the African energy consumption level is less than half that of Europe. Consequently, per capita consumption of an average African is about 10% of that of an

⁶ Over 600 million people lack access to electricity in the continent (AfDB 2017).

average European, making the case for greater energy for economic development in Africa stronger.⁷ Moreover, the weight of fossil fuels (oil, natural gas and coal), both relative as well as absolute, in Africa’s overall energy mix is lower than in Europe’s.⁸

Historically, energy transition has been less about a neat transition from one source to another and more about adding ‘cleaner’ sources to an existing energy mix, allowing for the phase-out of obsolete technologies (see figure 4). Thus, not only will energy transition be combined, meaning there will be different sources, but it will also be uneven given geographic features, local power structures and social relations that lead to the prioritisation of one source over another in a given context (Tooze 2023b), thus making it highly political and contested (Byiers et al. 2023a).

Figure 4: World shares of electricity production per energy source (left axis) and total energy production (right axis)



Note: 1 PWh = 1012 kWh

Source: Pinto et al. 2023

While some African countries seek to diversify their energy mix to include natural gas, not least by developing resources that they are endowed with, market risks associated with such investments need to be carefully assessed given the global move towards renewable energy sources for electricity generation.⁹ At the same time, turning Africa’s so-called “green potential” given their endowments for the production of clean energy¹⁰ into reality also requires significant resources - technological, financial, human, and enabling policy framework among others.

3.2. African industrialisation in a carbon-constrained environment

As late industrialisers, African countries face significant challenges. Not only has the nature of globalisation changed over the past decade so that global trade in goods is slowing down (Evenett 2023), but the window of opportunity for export-oriented industrialisation may also be narrowing given changes in technological development. The increasing skills and capital intensity of manufacturing technologies mean that African countries may find it more difficult to mimic the success of East Asian tigers (Rodrik 2023a). But even as African countries are faced with a dual

⁷ Indeed, African countries mention agriculture and rural development, jobs for poverty reduction and economy, among others, as development priorities for a (climate) resilience strategy (Kenny et al. 2023).

⁸ The use of biomass and waste is twice as high in Africa, mainly for cooking.

⁹ Investments in new gas infrastructure, which is mainly geared towards exports rather than domestic consumption, is likely to become riskier with uncertain returns as there is a global shift towards renewables (ACF 2022), especially given that renewable energy - especially solar, but increasingly wind too - can compete against fossil fuels without subsidies (Tooze 2023b). This may mean that African countries are left holding stranded assets and saddled with unsustainable debt.

¹⁰ Africa has 39% of the world’s renewable energy potential, more than any other continent (Schücking 2022).

challenge of catch-up industrialisation and maintaining a low-carbon emission pathway, there are significant opportunities for economic development through industrialisation.

One such opportunity is to harness green energy for developing and strengthening domestic production and competitiveness in places where energy is currently in short supply, unreliable or expensive. Given the potential low cost of renewable energy, higher deployment of these technologies can lower the cost of businesses and contribute to raising productivity as well as competitiveness. Decarbonisation of existing industries can provide opportunities for the emergence of new players or increase the competitiveness of existing ones if they are able to undertake these transitions, for example the production of low-carbon fertilisers for both regional and export markets (Byiers et al. 2023a).

Green industrialisation also includes opportunities to enter new value chains to make products that others require for decarbonisation (Hausmann and Schrag 2023), and thereby integrate into the global green economy. Africa is home to significant known deposits of CRMs for the production of green technologies. Apart from this, there are also significant opportunities, particularly in North Africa, in producing green hydrogen and green ammonia, both for domestic or regional consumption and for exports to Europe (El-Katiri 2023). There may also be new export opportunities in the manufacturing or assembly of green components such as solar PV panels, wind turbines and batteries for electric vehicles, among several others (Jayaram et al. 2021).

At the same time, there are also risks for African countries to go all-in on green industrial opportunities. Export markets for certain green inputs like hydrogen and ammonia remain highly speculative, and depend on the future success of decarbonisation in Europe, as well as the competitiveness of its industries. Regional markets for green products in Africa are nascent at best, and depend on the success of the AfCFTA and regional processes in encouraging trade, investment and industrialisation at scale.

The global environment in which African countries seek to industrialise is also increasingly volatile, with African economies having limited control over global industrial value chains. Big power competition is leading to what Dani Rodrik (2023b) calls a 'hyper-realist' paradigm, which emphasises the geopolitical rivalry between the US-China-EU and views interdependencies as a source of weakness rather than a strength. This zero-sum thinking can be detrimental to economies that are already in a weak position within global value chains, with countries keen to avoid explicitly choosing sides which can further limit their negotiating position.

Navigating this geopolitical environment presents challenges for African countries looking to position themselves in a global green economy beyond those already faced in promoting industrialisation and economic transformation. Opportunities are by default unevenly distributed, depending not only on natural endowments - particularly with regards to energy and CRMs - but also increasingly on the geopolitical importance and alignment of individual countries and their relations with the superpowers. Like any policy change, there will be winners as well as losers.

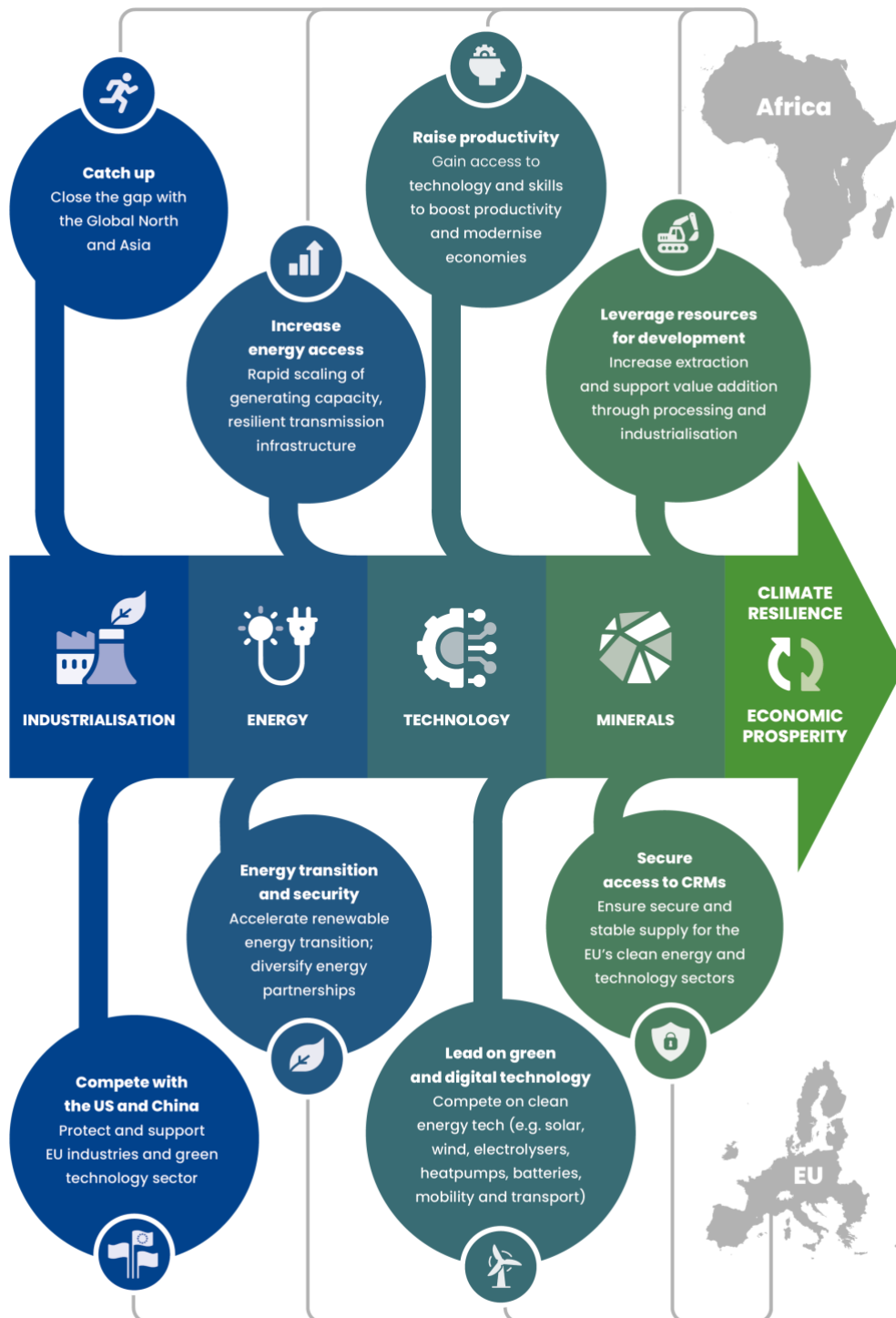
4. Hurdles to greater EU-Africa cooperation

Though African and European countries have similar goals, namely to industrialise, innovate and ensure prosperity, while building resilience to climate stress and other shocks, their starting points and priorities vary significantly (see figure 5).¹¹ Simply put, while the EU seeks to lead the race for green technology and infrastructure, African

¹¹ While African countries need catch-up industrialisation, the EU seeks to become global frontrunners; while African countries need innovations that address their context-specific challenges of low productivity, the EU seeks to emerge ahead in the technological race for green/digital leadership; while African countries need to raise their income levels through rapid economic growth to build resilience, the EU seeks to change consumption patterns towards greater sustainability.

economies seek to develop their economies in an increasingly carbon-constrained global environment, and avoid being caught up in global big power competition.

Figure 5: Common goals, different priorities



Source: authors

These different priorities have made it difficult to develop a clear common agenda in the space of climate and energy diplomacy, and are at the root of persistent tensions and conflicting narratives between European and African policymakers. In order to move Africa-EU collaboration forward, and refocus on the opportunities for a mutually beneficial green transition, three major sources of tension will need to be addressed.

4.1. Agency: African resources in a global subsidy race

Africa's integration into global value chains has long been dominated by exporting raw materials to the rest of the world. Its share in global exports has declined from a high of about 5% in the 1970s (Luke and MacLeod 2023) to about 2.5% in 2021 (ITC Trade Map) yet the footprint of raw materials in Africa's total exports increased by 53% from 1995 to 2015 (Danquah et al. 2023).

A major ambition of the AfCFTA is to alter the model of African economic development from a supplier of raw materials to the West and China, to scaling up domestic capacities to add as value and process minerals, whether as inputs to regional value chains or before exporting minerals out of the region.¹² This is already happening - intra-African trade has a higher share of manufactured goods than non-African trade (Songwe 2019).

Beneficiation over past decades, however, has been slow, owing partly to the way supply chains work as well as the capital, skills, technology and energy intensity of these processes, often leading processing to take place outside Africa (Opalo 2023a).

Competition for African resources could, in theory, provide African governments with greater negotiating power if well-utilised.¹³ Subsidies in advanced economies and new local content requirements like in the US, however, risk creating additional challenges for African countries looking to boost local processing (see Box 3).

Box 3: Graphite processing in Mozambique faced with local content requirements in the US

Mozambique is an important producer of graphite,¹⁴ with major offtake contracts with China, the US and EU (NS Energy n.d.; Alvarez 2022; van Vuuren 2017). While the country has long sought to develop mineral processing, new US incentives may limit their chances to do so. Syrah Resources, an Australian operator, active in Mozambique, and a supplier to Tesla (Alvarez 2022), for example, recently received a grant of up to \$220 million to expand an anode material facility (which uses graphite) in the USA (Dempsey 2022). The IRA's local content requirements may produce significant opportunities for the extractive sector, especially in the US and partner countries like Australia, yet they may also limit the prospects of graphite processing and greater value addition in Mozambique and other mineral exporters in Africa, whose minerals may not count to the tax credit thresholds for US consumption (Reinsch et al. 2022).

¹² In the words of AfCFTA Secretary General Mene, that trade agreement aims to "dismantle the colonial economic model", so that African economies can "stop being exporters of primary products to countries of the North", as well as "create jobs on the African continent" and "be self-sufficient in our own continental production" (AU 2021).

¹³ This is the thinking behind a series of new initiatives, including a cooperation agreement between Zambia and the Democratic Republic of the Congo (DRC) (UNECA 2022; Afreximbank 2023) to establish special economic zones for battery production. The EU has also been trying to establish new strategic partnerships and investments in African green minerals through its global gateway, including in DRC (Komminoth 2023). The first-ever African Critical Minerals Summit is planned for late 2023 (Zawya 2023).

¹⁴ Graphite is used as the anode material in lithium-ion batteries due to its low costs and energy density. It has good conductive properties and can cope well with the flow of lithium ions during charging and discharging (Elcan Industries n.d.).

The EU does not have strict local content requirements, and the draft CRM regulation even calls for “assist[ing] partner countries in developing their own extraction and processing capacities” (EC 2023). While this reflects a recognition of partner countries interests, the details on how that will happen remain unclear. The risk also remains that European targets for onshoring processing may clash with African countries’ development objectives that build on expanding mineral processing as a way to support industrialisation in Africa.

4.2. Approach: The impact of the EU’s unilateral actions

While the past deindustrialisation trend since African independence is reversing, albeit building on domestic demand rather than exports (Kruse et al. 2022), the competitiveness of existing African exports in heavy industries may come under increasing pressure from unilateral measures like the CBAM (see Box 4). From an EU point of view, the CBAM aims to avoid ‘carbon leakage’ and create a ‘level-playing field’ between European and industries around the world not subject to the EU carbon emissions trading system. However, to many in the developing world, including in Africa, such unilateral actions are seen as discriminatory trade measures (Euractiv 2023) and a violation of the principle of ‘Common But Differentiated Responsibilities’ (ACF and LSE 2023; Ülgen 2023). This would arguably leave the CBAM open to contestation through the World Trade Organization (WTO), on which India and South Africa have started taking positions vis-à-vis the EU (Ward 2023; Euractiv 2023).

Reactions to the scheme outside the EU have thus been overwhelmingly negative (Oguntoye et al. 2023). There is a fear that the CBAM will impose a net cost on developing countries, at least in the short term, to the benefit of EU firms, and indeed the EU through the revenues collected. According to one estimate, Africa could lose up to US\$25 billion of exports given the importance of the EU as a share of African exports, and as pointed out above, its relatively high carbon intensity of production (ACF and LSE 2023). The potential (negative) impact will be through direct effects on the sector affected by CBAM and through indirect effects on the industries that supply inputs to the affected sector (Magacho et al. 2022). These effects will be differently felt across countries, and in several aspects such as output, foreign exchange, employment, wages, and taxes. A country like Mozambique, for example, could be hard hit. Over 20% of its exports are made up of aluminium, 90% of which are destined to the EU (ITC Trade Map and Atlas of Economic Complexity).

While the focus of recent analysis has been on the potential negative effects of external measures of the CBAM, less attention has been paid to what is needed to ensure these schemes contribute to decarbonisation and industrial development outside of the EU. In theory, if accompanied by investment in the technological upgrading of CBAM-affected developing countries, the scheme could in fact produce a much-needed boost for African industrialisation, and increase market access of key African producers to the EU (Oguntoye et al. 2023). Some major economies, for instance India, are responding by developing their own carbon credit certification (Sen 2023) that would allow them to collect rather than transfer revenues due to carbon taxes. Others, like Morocco, that have fairly ambitious decarbonisation plans in place, instead could seek to take advantage of future niche markets for green industrial goods (Leila 2023; Oguntoye et al. 2023). The EU’s gradual rollout of the CBAM also entails a transition phase, which could allow partner countries to position themselves vis-à-vis a greener EU market, and possibly even negotiate directly with the EU (EC 2023e; Scott and Moens 2023).

But the unilateral introduction of the CBAM with limited consultation or guarantees for a mutually beneficial implementation strengthens the perception that African countries are an afterthought in the EU’s global decarbonisation agenda. Despite the global benefits of reducing carbon emissions in a cost-effective way, the EU’s efforts are therefore likely to face considerable further resistance from developing countries.

4.3. Scale: Climate finance for a green energy transition

While African countries need access to previously unseen levels of funding to successfully position themselves in a global green transition, many are instead experiencing a severe and persistent funding squeeze, leading to a stalled economic recovery on the one hand and unsustainable debt burdens on the other (IMF 2023; Karaki and Bilal 2023). This reduces their ability to prioritise clean energy and make the long-term investments they need to secure the potential benefits of the global green transition.

According to the IEA (2022b) African countries need around US\$190 billion annually to achieve universal electricity access by 2030, with two-thirds of this amount going for clean energy. Still, climate finance flows for clean energy specifically stood at US\$9.4 billion in 2020 (Meattle et al. 2022). Whereas global investment in renewable energy increased considerably in the past few years, further widening the gap with new fossil fuel investments, the bulk of those investments take place in China, the EU and the US, with developing countries, and Africa trailing far behind (IEA 2023). Moreover, there is a need to address climate fund fragmentation and improve quality and effectiveness of existing climate finance (Le Houérou 2023; Cichocka and Mitchell 2022), while ensuring sufficient additionality of new climate finance¹⁵.

African countries find themselves in unfavourable international financial architecture with persistent gaps between commitments and disbursements and financing not matching their development needs (Were 2021). Investments are also highly concentrated in a few middle-income countries (MICs) countries, leaving others, particularly least developed countries (LDCs) behind in their ambitions to increase (green) energy access (Meattle et al. 2022; Ahairwe et al. 2022). Public financing has not been able to catalyse private investments to the extent that was envisaged. A recent study in Zambia for example shows that for every US\$ in concessional financing for a large solar energy programme only about 28 cents of private finance was catalysed (Emery 2023).

A large proportion of energy finance in Africa is in the form of loans, including at commercial rates (Cichocka and Mitchell 2022; Meattle et al. 2022). While the cost of technology for renewable energy production is rapidly declining, the cost of capital remains prohibitively high for many African operators. The regional average cost of capital for solar, onshore wind and offshore wind in Africa is 8.2%, nearly twice the European average of 4.4% (IRENA 2023). This is partly because with stubbornly high but 'subjective' risk assessments and credit ratings, African countries spend \$74.5 billion in excess interest and foregone funding, equivalent to 12% of Africa's net official development assistance in 2020 (Assa and Gevorkyan 2023).

EU institutions and member states together are by far the largest providers of climate finance to Africa (EC 2021), though this is still insufficient given the large funding needs in Africa. This gap is even more pronounced in the field of climate adaptation (Knaepen and Dekeyser 2023). Moreover, under its Global Gateway initiative, the EU also announced a €150 billion investment plan for Africa (EC n.d.). At COP27, the EU announced further plans to raise €15 billion from public institutions and private investors for renewable energy (Sundar 2022). EU member states also support crucial initiatives like the Bridgetown agenda - an attempt to create a more equitable financial architecture around the Sustainable Development Goals (SDGs) (UN 2023). While these initiatives show a recognition of the finance gaps and shortcomings, access to the necessary financial resources to enable green economic development will likely remain a major source of tension between Africa and the Global North in general.

¹⁵ Miller et al. (2023) argue that recent increases in climate finance primarily come from more investment in energy and transport sectors being designated as climate finance.

5. Towards a mutually beneficial green transition

Both the EU and African economies face unique challenges as they move towards a green transition. Both are looking to advance their economies, yet from different starting points. While the EU is under pressure to secure its energy, and industrial supply chains to bring its industries into the race, African economies are looking to kickstart industrialisation as the backbone of the AfCFTA.

The green technology sector in general, and clean energy (solar and wind), battery storage and electric mobility in particular, illustrate that the global economic power structures have shifted, and that China has come to dominate both up and downstream parts of key green value chains. Both the EU and African economies, therefore find themselves in a race to 'catch up', and to bring greater value addition to their shores. The EU, by scaling up its own production capacity and reducing its dependence on Chinese inputs (e.g. critical minerals for EU green industries) and imports (e.g. EVs and solar panels), and African countries by better leveraging their resources to attract investment in processing capacity and manufacturing.

As both partners can potentially offer what the other side needs (CRM and other renewable energy supply to the EU and strategic investments and technology transfer to Africa), there is a genuine case to develop more equal energy and industrial partnerships, built on strategic interdependencies rather than a one-way relationship where African raw materials feed the green industry of the EU, or where the EU provides climate finance as part of development cooperation or externalises its climate agenda without a genuine consultation with partners.

5.1. EU-Africa cooperation as a geopolitical opportunity

EU-Africa cooperation on climate and energy is held back less by a lack of opportunities than by the poor track record of investments and implementation of commitments. As the EU seeks to diversify its external energy dependencies and regain control over key industrial supply chains, it is of strategic interest to build more mutually beneficial—and therefore more stable—partnerships with African countries. This goes beyond securing access to resources alone. Long-term EU energy security requires renewable energy transition and greater cross-border integration, including through interconnections with European neighbours in North Africa, among others (Medinilla et al. 2022). Securing supply chains for European green industries with African countries will require creating a viable and attractive alternative for mineral exporting countries. Finally, beyond subsidies and policies to 'level the playing field', the competitiveness of Europe's green industries will require bigger markets, affordable energy and new production opportunities both within and outside the EU.

Similarly, African countries can benefit from the EU market to move their industrialisation agendas forward. Recognising the strategic advantages held by African countries in the EU's green transition, can support the case for Africa's green economic development, aligning it with the EU's geopolitical ambitions of pursuing technological leadership and securing energy and supply chain stability.

This calls for a different, more strategic and long-term approach to African economic transformation and green transition that prioritises particular opportunities, while acknowledging the specific challenges and transition risks faced by African economies, rather than merely through the lens of development cooperation. That then requires more context-driven and adaptive approaches that take account of political economy realities within different African states.

5.2. Contextualising opportunities and transition risks

While the EU-Africa partnership can play an important role in developing a better-shared narrative and climate diplomacy, new energy and industrial partnerships need to be built from the bottom up, through bilateral deals leading to regional opportunities. This calls for a better understanding of the political economy of green energy and industrial opportunities such as hydrogen, mineral processing and manufacturing, as well as transition risks linked to a dependence on volatile external markets, fossil fuel dependencies and access to capital and technology.

Some countries have emerged as champions of green energy by successfully positioning themselves as first movers, motivated by different factors ranging from leveraging natural endowments (Kenya), to industrial imperatives (Morocco), or commercial opportunities (Egypt, Namibia) and helped by their distinct political economy (Byiers et al. 2023b), yet neither the opportunities nor the risks are evenly distributed across the African continent, nor do all countries have uniform relations with the EU. For instance, there are countries with significant opportunities for decarbonisation of their exports as they seek to secure their market access to the EU. These include countries like Morocco and South Africa.

On the other hand, there are others that are not only less integrated into the EU market, but also seek to seize new opportunities to become relevant actors in green value chains. Zimbabwe has sought to ban the exports of raw lithium in an effort to process the mineral and add more value domestically (Mitchell 2023; Mukeredzi 2022). Moves like this also show that African countries are increasingly weighing short-term financial gains against longer-term industrialisation opportunities, and are looking for ways to ensure greater value addition and technology transfer.

What is a clear opportunity for some, may also become a transition risk for others. The prospect for renewable hydrogen exports to the European market is leading to a rapid search for early investments across the continent, yet the production potential is just one of the factors that will define the long-term viability of these projects. North African hydrogen, for example, may benefit from both domestic industrial use cases (e.g. fertilisers, shipping fuel), and geographic proximity to Europe, which could enable relatively low-cost exports, but these factors may be less available to prospective producers in other parts of the continent, which may increase the risks for investing heavily in a hydrogen economy (Byiers et al. 2023; Civilini 2023).

As African countries seek to better navigate these new opportunities and risks, the EU needs a highly differentiated green deal diplomacy, targeting both the champions, and those for which the transition risks are greatest.

5.3. Towards a new partnership

The current geopolitical environment illustrates that certain strategic decisions cannot be left to the market, which is unable to factor in geopolitical risks. Moving the EU and Africa towards a more strategic partnership, built on complementary assets and needs, will need to be a politically-driven decision. Bringing out shared benefits in a green transition will require action in the following areas:

- **Investment for industrialisation** - Beyond clean energy, African countries need investment that can propel their industrialisation. This can include a focus on specific industries such as hydrogen and other key (green) industries. Strategic investments could meet the objective of value addition and employment generation for African countries on the one hand, and securing supply of affordable critical minerals and green inputs for European industries on the other.

- **Research, innovation, technology transfer and market access** - while this has been taking place to some extent, the focus of such technology transfer needs to be targeted to areas that can enhance the capacity of African produced goods and have adequate access to the EU market.
- **Link with the AfCFTA and regional markets:** New investments should be explicitly framed as contributing to regional markets and the implementation of the AfCFTA. This is especially important for new value chains (e.g. hydrogen economy), but also to effectively scale up African manufacturing.
- **Infrastructure for development** - African needs for infrastructure development are large, and these need to be made from the lens of development cooperation but as an opportunity to unleash the potential to not only provide the European market with competitive exports (beyond raw materials) but also to become a large market for European goods.
- **Resource development** - while the EU aims to form strategic CRM partnerships and ‘clubs’ (see section 2 above) this is valuable to partner countries provided there are also complementary investments in value addition and processing in these countries so they choose to partner with the EU, as opposed to any other partner.
- **Financing** - In a strategic EU-Africa partnership, financing must not be seen simply from a viewpoint of development cooperation or even simply de-risking of private finance. Instead, given its strategic nature, such financing needs to be politically motivated.

5.4. Four recommendations for better partnerships

As the EU and African countries work to catch up in the space of green tech and industrialisation, there is a case for more strategic and mutually beneficial partnerships. With this in mind the following four recommendations should be taken up in any new EU-Africa initiative in the field of energy transition and industrialisation.

Avoid instrumentalisation

While some African countries hold coveted assets - minerals and/or energy potential or carbon sinks - for a green transition, the EU should avoid instrumentalising African resources to feed its own industrial production as it seeks to compete against the US and China to remain a relevant geopolitical actor. This would reinforce the perceptions that the international order is “explicitly designed to exploit Africa” or that it “treats Africans as global second-class citizens” (Murithi 2023). New deals and partnerships should focus as much on developing their capacity to add value domestically, and developing regional markets and industrial clusters, as benefiting from them.

Recognise African agency

African countries are working to navigate the changing geopolitical environment to maximise opportunities and minimise transition risks. Yet they are also highly vulnerable to external triggers, including EU policy measures due to historical inequalities and interdependencies. There is a need for more proactive dialogue and engagement on the effects of external EU climate measures, and the necessary accompanying measures to ensure a mutually beneficial decarbonisation agenda. In addition, as the EU competes with China and the US it should not see African countries as a passive battleground for big power influence, but make sure that African economic development and industrialisation objectives, as defined by governments, businesses and citizens are at the centre of EU investments and initiatives to demonstrate the win-win rhetoric.

Partnership, not charity

African countries struggle with unfavourable risk *perceptions* and a general lack of appetite in the international markets for (green) investments in Africa. Nevertheless, African businesses are at the forefront of innovations that better suit their local realities - ranging from solar farms for businesses and solar irrigation targeting smallholder farmers to clean cooking electric mobility solutions at the household and customer level (Shirley 2023). To scale these innovations, countries need financing through partnerships rather than aid. Innovation also requires access to technology. The EU should accompany investments with more ambitious technology deployment and skills development.

Evidence, not rhetoric

There is a systematic gap between the EU-Africa partnership rhetoric, and the practice of cooperation. In order to resolve persistent tensions, EU-Africa cooperation will need to deliver a better proof of concept of a mutually beneficial green transition. This means moving from a scattering of commitments to demonstrating the ability of European investment in Africa to create new jobs, economic opportunities, and revenue linked to green energy and new industrial value chains.

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