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Between Europe and the People's Republic of China: Understanding Africa's Energy Transition

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9.1 Introduction

The first overseas trip of any leader is an especially important one. Symbolic exercises as much as anything else, these visits often spell out the foreign policy goals of a new administration. That European Commission President Ursula von der Leyen chose first to visit Ethiopia – the birthplace and seat of the African Union (AU) – is therefore no coincidence. President von der Leyen spelled out the trip's rationale in a speech alongside AU Commission Chairperson Moussa Faki, declaring that:

> [f]or my first visit, I have chosen the continent hosting the world's fastest growing economies. A continent with immense ambition and aspirations, but also with immense needs . . . for the European Union [EU], you are more than just a neighbour.[1]

This renewed commitment comes at a juncture of significant promise, and profound change, in modern African history.[2] With 2000 heralding the so-called 'African century',[3] the continent now boasts 6 of the world's 10 fastest growing economies,[4] and is predicted to account for more than half of global population growth between 2019 and 2050.[5] Its young, economically mobile population is complemented by an abundance of natural resources, and an environmental predisposition to renewable energy opportunities like solar and wind power.[6] All of this makes it a most attractive destination for foreign direct investment (FDI). The continent's unique vulnerability to climate change,[7] relatively low rates of electrification,[8] and high degrees of fossil fuel dependency and energy poverty[9] make such FDI an equally attractive prospect for recipient States.

[1] U. von der Leyen, Remarks by President von der Leyen at the joint press statement with Moussa Faki, Chairperson of the African Union Commission (speech, African Union, 7 December 2019). https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_19_6697.
[2] For the purposes of this chapter, 'Africa' will be taken as contiguous with membership of the African Union (AU).
[3] Thabo Mbeki's Victory Speech, BBC News World Mediawatch (3 June 1999). http://news.bbc.co.uk/2/hi/world/monitoring/360349.stm.
[4] According to World Bank, Global Economic Prospects (World Bank, June 2021), pp. 185–188. https://openknowledge.worldbank.org/bitstream/handle/10986/35647/9781464816659.pdf?sequence=10&isAllowed=y.
[5] United Nations Department of Economic and Social Affairs, World Population Prospects 2019: Highlights, ST/ESA/SER.A/423 (2019), pp. 6–7, https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf.
[6] See M. Hafner, S. Tagliapietra, L. de Strasser, Prospects for renewable energy in Africa, in M. Hafner, S. Tagliapietra, L. de Strasser (eds.), *Energy in Africa: Challenges and Opportunities* (Springer, 2018), pp. 47–75.
[7] See generally B. Trewin, J.-P. Adam, J. Alvar-Beltrán, et al, State of the Climate in Africa 2019. WMO-No. 1253, World Meteorological Organisation (2020). https://library.wmo.int/records/item/57196-state-of-the-climate-in-africa-2019?offset=.
[8] International Energy Agency, Africa Energy Outlook 2019 (IEA, 2019), p. 27. [9] Ibid. at p. 34.

Set against this investment environment, the European Union (EU) has turned its attention firmly southwards. Under the auspices of the leviathan European Green Deal (Green Deal),[10] Europe and its Member States are investing huge sums in Africa's renewable energy potential, with a view to enabling energy transition on an international scale. Indeed, Africa is central to European efforts to export climate policy and galvanise international norms in its own image. But Europe is not alone. The People's Republic of China (PRC) has similarly noticed Africa's rise and duly extended billions in funding for major energy projects, albeit spread across fossil fuel, renewable sources, and extractive industry, to support crucial technology supply chains.

This chapter will consider these two approaches, and examine whether, and if so, the extent to which PRC investment priorities are likely to hinder Europe's climate-focused engagement with Africa, if indeed European engagement is really as positive as EU rhetoric would have us believe. It will begin by charting African engagement with the global climate regime, before surmising the current foundation of Afro-European relations. It will then examine energy co-operation between the two continents in detail, focusing on three European and three African States at the heart of this relationship. In the final section, it will consider the PRC's investment profile, and interrogate its implications for Africa as against European and Paris Agreement priorities.

9.2 Africa, Europe, and the Global Climate Regime

From the earliest warnings of climate change, Africa has been heralded as uniquely at-risk.[11] With its agricultural output overwhelmingly dependent upon rainfall, the twin phenomena of drought and desertification alone present a grave existential threat.[12] That Africa must also balance imperatives like food security and poverty relief with the estimated US$50 billion cost of climate change adaptation before 2050 only complicates this outlook.[13] Africa's current position – as an emerging green investment hub, and a voice for climate justice and sustainable development – is a direct result of these pressures, although it has not always been so. To understand modern African climate politics, one must first chart the growth of African climate diplomacy, and the accompanying boom in climate-positive investment across the same period.

9.2.1 Early African Climate Diplomacy

Co-ordinated African climate policy is a relatively recent phenomenon. Its genesis can be traced to the very first international climate summit, the United Nations (UN) Conference

[10] European Commission, Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: The European Green Deal (11 December 2019). COM(2019) 640 final ('Green Deal'). https://ec.europa.eu/info/sites/default/files/european-green-deal-communication_en.pdf.

[11] See, for example, M. Giordano, E. Bassini, Climate change and Africa's future. *Governance in an Emerging World* [Winter Series 2019], no. 119, at pp. 30–41. Hoover Institution. www.hoover.org/research/climate-change-and-africas-future.

[12] 'Climate Change in Africa. African Development Bank Group (AfDB), 2021. www.afdb.org/en/cop25/climate-change-africa.

[13] M. Schaeffer, F. Baarsch, G. Balo, et al., Africa's Adaptation Gap 2. Technical Report. UNEP, 2014, pp. 44–45. https://climateanalytics.org/media/africa_adaptation_gap_2014_1.pdf.

on the Human Environment of 1972,[14] and the UN Environment Programme's (UNEP) establishment with headquarters in Kenya.[15] Motivated by a dearth of Africa-focused climate organisations, the UNEP convened a series of ministerial-level meetings between 1983 and 1985 to spur a coherent pan-African climate policy. The resulting African Ministerial Conference on the Environment's (AMCEN) Cairo Programme institutionalised climate policy co-ordination for the first time, with an agreed platform to halt deleterious land use and achieve sustainable energy and food self-sufficiency.[16] While earlier initiatives like the 1980 Lagos Plan of Action followed similar lines,[17] the Cairo Programme was the first to achieve international acclaim and financial support.[18]

The effects of this unity were not immediately felt. Despite promulgating the African Common Position on Environment and Development in 1991, which stressed the importance of channelling sustainable development funding from global North to South,[19] European and American negotiators at the 1992 Earth Summit overawed petitions from G77 States (largely developing countries, plus the PRC) to commit an exact figure to climate finance.[20] Galvanised by this experience, a pan-continental African Group of Negotiators on Climate Change (AGN) was created in 1995 for the first UN Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP).[21] Governed by a rotating two-year chairmanship, AGN members began meeting days prior to each COP to agree on a common position, with occasional AMCEN guidance.[22]

Initial AGN efforts, like their campaign during the 1997 Kyoto Summit to make the Clean Development Mechanism (CDM) more geographically and economically equitable,[23] were mostly unsuccessful. The combination of prohibitive participation costs for UNFCCC events, inadequate skills and support among delegations, and unclear mandates from delegating governments compromised the AGN early on.[24] Indeed, as Charles Roger and Satishkumar Belliethathan note, '[b]y the mid-2000s, it had become clear how little African negotiators had achieved'.[25] Despite these setbacks, by COP 12 in Nairobi – ambitiously dubbed 'the Africa conference'[26] – there was a growing international appreciation for the effects of climate change on Africa, and an increasingly pan-African approach to climate negotiations.

[14] S. Toure, P. Acquah (eds.), *History of the African Ministerial Conference on the Environment: 1985–2005* (AMCEN, 2005), p. 7. https://wedocs.unep.org/bitstream/handle/20.500.11822/8876/AMCEN_History.pdf?sequence=3&isAllowed=y.

[15] Ibid.

[16] Cairo Programme for African Co-Operation, UNEP/AEC 1/2, annex I. https://wedocs.unep.org/bitstream/handle/20.500.11822/20526/Amcen_1_decision.pdf?sequence=1&isAllowed=y.

[17] Toure and Acquah, *History of the African Ministerial Conference on the Environment*, p. 13.

[18] See, for example, UN ESCOR, Provisional Summary Record of the 39th Meeting. UN Doc. E/1995/SR.39, 24 July 1995. https://digitallibrary.un.org/record/189048.

[19] African Common Position on Environment and Development. UN Doc. ECA/ENV.UNCED/AFRICOM/1, October 1991. https://repository.uneca.org/bitstream/handle/10855/21853/Bib-69643.pdf?sequence=1&isAllowed=y.

[20] P. Lewis, The Earth Summit: negotiators in Rio agree to increase aid to third world. *New York Times*, 14 June 1992. www.nytimes.com/1992/06/14/world/the-earth-summit-negotiators-in-rio-agree-to-increase-aid-to-third-world.html.

[21] Home. African Group of Negotiators on Climate Change. 2021. https://africangroupofnegotiators.org.

[22] C. Roger, S. Belliethathan, Africa in the global climate change negotiations. *International Environmental Agreements: Politics, Law and Economics* 2016, 16: 91–108, at p. 95. See also AMCEN, African Ministers of Environment at UNEP: African ministers to review ratification of environment conventions and agreements. Press release. www.africa.upenn.edu/Govern_Political/unep_afr_env.html.

[23] Roger and Belliethathan, Africa in the global climate change negotiations, pp. 96–98.

[24] Ibid. at pp. 97–98.

[25] Ibid. at p. 98.

[26] W. Sterk, R. Watanabe, H. E. Ott, B. Wittneben, The Nairobi Climate Change Summit (COP 12 – MOP 2): taking a deep breath before negotiating post-2012 targets? *Journal for European Environmental & Planning Law* 2007, 4(2): 139–148, at p. 140.

9.2.2 Committee of African Heads of State and Government on Climate Change: Copenhagen, Durban, and Paris

COP 12 marked a definite turning point for co-ordinated African climate diplomacy. If nothing else, it was the first opportunity for the realities of climate change in the continent to be laid bare. No sooner had delegates been taken to see the drying Lake Naivasha and the dead Lake Nakuru, each besieged by massive drought, was north-western Kenya inundated by flooding rains, threatening the lives of the 160,000 refugees in the Dadaab camp complex.[27] Despite this powerful display of climate change, COP 12 had only slight successes, marginally accelerating the CDM and promoting adaptation in the developing world.[28]

With the 'Africa conference' having fallen flat, the AU took the lead in organising a common African position. At its Thirteenth Assembly in Sirte, alongside electing to join the EU by acceding as a bloc to the UNFCCC, the AU adopted a new 'common position' to be advanced by the Committee of African heads of State and Government on Climate Change (CAHOSCC).[29] Initially agreed to take Africa's common position only as far as COP 15, the CAHOSCC has since evolved into a regimented mechanism for whole-of -continent climate negotiation. With a rotating chair and guaranteed representation from Africa's five regions and subsidiary AU organs, it sits above the AGN (which handles on-the-ground COP negotiation) with the AMCEN serving as an intermediary. Sure enough, with this more regimented approach, African efficacy on the international climate stage has grown. Roger and Belliethathan chart this in their 2016 chronology of African climate negotiation, contrasting the fewer than 20 submissions made by African parties at each COP from 1991 to 2006 with the massive volume made thereafter, both by the AGN and by individual African States. Indeed, they note that African/AGN contributions have come to surpass those made by the G77.[30]

Building upon the AU's 2009 Nairobi Declaration on the African Process for Combating Climate Change, which focused especially on climate finance,[31] late Ethiopian leader Meles Zenawi used his AGN leadership at COP 15 later that year to advance a US$50 billion finance deal for adaptation in the global South. Although cast by some as a cession to Western demands by an environmentally inconsiderate leader,[32] it began a succession of COP summits with a strong African presence. Following a fraught COP 16,[33] the AGN was

[27] Ibid.; UNEP, Kenya: airlift to flood-affected refugee camps in Dadaab. 28 November 2006. www.unhcr.org/news/briefing/2006/11/456c15f42/kenya-airlift-flood-affected-refugee-camps-dadaab.html.

[28] UNFCCC, Decisions adopted by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, 1/CMP.2, 2nd sess., 10th plen. Mtg. UN Doc. FCCC/KP/COM/2006/10/Add.1. 17 November 2006. https://unfccc.int/resource/docs/2006/cmp2/eng/10a01.pdf.

[29] African Union, Decision on the African Common Position on Climate Change Including the Modalities of the Representation of Africa to the World Summit on Climate Change, Doc EX.CL/525(XV), 13th sess., detail. Assembly/AU/Dec.257(XIII) Rev. 1. 3 July 2009. https://au.int/sites/default/files/decisions/9560-assembly_en_1_3_july_2009_auc_thirteenth_ordinary_session_decisions_declarations_message_congratulations_motion_0.pdf .

[30] Roger and Belliethathan, Africa in the global climate change negotiations, p. 115.

[31] Nairobi Declaration on the African Process for Combating Climate Change, 29 May 2009. https://allafrica.com/view/resource/main/main/id/00011975.html.

[32] S. Beyene, Ethiopia: Meles Zanawi's ploy for Copenhagen Conference. Ethiopian Review. 23 November 2009. www.ethiopianreview.com/index/11401.

[33] J. Vidal, J. Tuckman, Cancún Climate Summit: rich accused of 'holding humanity hostage'. *The Guardian*, 26 November 2010. www.theguardian.com/environment/2010/nov/26/cancun-climate-summit-humantiy-hostage.

actively involved in brokering the Durban Platform for Enhanced Action at COP 17, binding parties to the negotiation by 2015 of what would become known as the Paris Agreement. Further (if limited) success was had in Doha with the extension of a second Kyoto Protocol commitment period, as well as in Warsaw with the extension of Green Climate Fund financing, before being tempered by a weak position on adaptation finance in the COP 20 Lima call for climate action. All of this culminated in COP 21, where the AGN joined the EU and United States in advancing that the landmark Paris Agreement should be legally binding.[34] By contrast to the pre-AMCEN era, they cut an experienced and effective figure on the world stage.

9.2.3 European Union–African Union Co-Operation

Afro-European relations, while deep and long-standing, did not place any real significance on climate change until at least the early 1990s. This was largely structural – between Cold War tension and African decolonisation,[35] little political will existed to focus on environmental concerns. With the fall of the Berlin Wall, the end of the European Cold War, and the dismantling of Apartheid in swift succession, however, priorities soon shifted.

The groundwork for today's EU–AU climate relationship was laid before the AU had even come into being, with the 1996 'Green Paper on relations between the EU and the Organisation of African, Caribbean and Pacific States (ACP) countries on the eve of the 21st century' declaring it 'imperative to reach international agreement on clean technology and how to share the costs of environmental protection between industriali[s]ed and developing countries.'[36] Locating 'economy, society and the environment' as a pillar of Africa–EU relations signalled a departure from the previous interregional agreement, the Lomé Convention, which was chiefly commercial and financial in nature.[37] This dialogue culminated in mid-2000 with the first Africa–Europe summit, and the Cairo Declaration, in turn laying the basis for an intercontinental comprehensive agreement. Named for Cotonou, the city of its consecration, despite not encompassing the entire African continent,[38] that agreement underpins today's broad-based and diverse Afro-European relationship.

Similarly to Lomé before it, the Cotonou Agreement proceeds on a set of fundamental principles, including prioritisation of the 'environmental aspects of development'.[39] Later revisions have gone further, placing a much greater emphasis on climate change, sustainability,

[34] AfDB, African Environment Ministers reiterate call for binding agreement or nothing at all at Paris climate talks. 10 December 2015. www.afdb.org/en/news-and-events/african-environment-ministers-reiterate-call-for-binding-agreement-or-nothing-at-all-at-paris-climate-talks-15197.

[35] The exact 'end' of colonization in Africa – and indeed whether it *has* ended – is disputed; see, for example, D. Mwambari, Africa's next decolonisation battle should be about knowledge. Aljazeera. 6 September 2019. www.aljazeera.com/opinions/2019/9/6/africas-next-decolonisation-battle-should-be-about-knowledge/.

[36] Commission of the European Communities, Green Paper on Relations between the European Union and the ACP Countries on the Eve of the 21st Century: Challenges and Options for a New Partnership. COM(96) 570 final, p. 2. http://aei.pitt.edu/1206/1/ACP_21st_gp_COM_96_570.pdf.

[37] Ibid. at p. x.

[38] None of the Maghreb States (Egypt, Libya, Tunisia, Algeria, Morocco, and the Sahrawhi Arab Democratic Republic) are ACP members.

[39] Cotonou Agreement, EU-ACP, signed 23 June 2000, OJ L 287, entered into force 1 April 2003, art. 1.

and the Millennium Development Goals.[40] One noteworthy example is the original article 32, governing co-operation in renewable energy and sustainable development, which has since been augmented by 32A to focus significantly on climate change. These provisions, together with those covering economic co-operation, trade, and political dialogue, have spanned a period of exponential growth in AU–EU relations. With the treaty's inbuilt expiry in March 2020, a provisional extension until November 2021 was granted to facilitate the imminent entry into force of a new 'EU–[ACP] Partnership Agreement'.[41] Hopes, and expectations, are high for its arrival. Of course, the Africa–Europe relationship cannot, and should not, be understood from a purely supranational perspective. Cross-continental climate diplomacy has been pursued to an even greater extent on the State-to-State front.

9.3 Standing on African Shoulders: Africa and the European Green Deal

Since the Paris Agreement's entry into force on 4 November 2016,[42] climate-positive European investment has steadily accelerated. Spearheading these investments is the Green Deal, 'a new growth strategy for our economy, people and planet', which marks Europe's most concerted attempt to meet Paris Agreement imperatives, reduce emissions by at least 55% by 2030,[43] and achieve carbon neutrality by 2050.[44] A complete economic transformation has been envisaged, replete with a €65 billion 'Just Transition Mechanism' to pivot fossil-fuel dependent regions towards green energy.[45] As President von der Leyen stated in her Earth Day 2021 address:

> The Paris Agreement is humanity's life insurance . . . science tells us it is not too late [to act], but we must hurry up. This is what Europe is doing. 11 days after [I took] office, [the EU] launched the European Green deal for transforming the economy.[46]

Far from keeping ambitions within its own frontiers, however, the EU has also directed its attention – and considerable investments – southwards to Africa. First flagged in 2019, the EU has consistently reiterated the importance of prioritising environmental issues in Cotonou's successor agreement.[47] In particular, it has stressed the importance of the Africa–Europe Alliance in '[unlocking] Africa's potential to make rapid progress towards a green and circular economy'.[48] This has been backed up more recently by what some have

[40] Ibid., preamble.
[41] European Commission, Post-Cotonou Negotiations on New EU/Africa–Caribbean–Pacific Partnership Agreement Concluded. 15 April 2021. https://ec.europa.eu/international-partnerships/news/post-cotonou-negotiations-new-euafrica-caribbean-pacific-partnership-agreement-concluded_en.
[42] S. Yeo, Explainer: Paris Agreement on climate change to 'enter into force'. Carbon Brief. 6 October 2016. www.carbonbrief.org/explainer-paris-agreement-to-enter-into-force.
[43] S. Braun, Opinion: EU Green Deal can spark a decarbonization revolution. Deutsche Welle. 11 December 2019. www.dw.com/en/opinion-eu-green-deal-can-spark-a-decarbonization-revolution/a-51623313.
[44] U. von der Leyen, Earth Day Speech at the Global Leader's Summit (Speech, Global Leader's Summit, 22 April 2021). https://ec.europa.eu/commission/presscorner/detail/en/speech_21_1882.
[45] European Commission, The Just Transition Mechanism: making sure no one is left behind. 2021. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/just-transition-mechanism_en.
[46] Von der Leyen, 'Earth Day Speech at the Global Leader's Summit'.
[47] European Commission, Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: The European Green Deal. 11 December 2019. COM(2019) 640 final ('Green Deal'), pp. 20–21. https://ec.europa.eu/info/sites/default/files/european-green-deal-communication_en.pdf.
[48] Ibid. at p. 21.

called the EU's new counterweight to the PRC's Belt and Road Initiative (BRI)[49] – the €300 billion Global Gateway Infrastructure Plan[50] – which has allocated some €150 billion to Africa to accelerate the continent's green energy transition.[51]

9.3.1 Africa's Place in the European Green Deal

While EU investment in green energy is not a new development, the recent shift in focus towards FDI marks a noticeable transition in the EU's cogitation regarding both the Green Deal and the Paris Agreement. To this end, several significant factors are driving European investment into Africa, chief among them being the EU's drive to establish mutually renewable ('circular') economies.

9.3.1.1 Mutual Benefit? What Africa Offers Europe (and Vice Versa)

As a continent, Africa is unparalleled in its 'green' potential. Central to this are two considerations – raw resources and energy potential. On the first count, alongside well-documented hydrocarbon deposits in States like Nigeria, Africa is also home to many of the rare earth elements critical to solar photovoltaic (PV) and other green technologies. Whether cobalt reserves in the Democratic Republic of the Congo (DRC) and Madagascar,[52] lithium in Zimbabwe,[53] or bauxite in Guinea,[54] the extraction of such resources will undoubtedly facilitate the transition towards renewable technologies.[55] As for energy, the EU has identified Africa's huge potential in the transition to so-called 'green' hydrogen flagged in its 2020 hydrogen strategy for a climate-neutral Europe.[56] Given Europe's geographical proximity to potentially large-scale hydrogen producers such as Morocco and Tunisia, and their potential to produce such hydrogen relatively cheaply, this situation is uniquely opportune for both sides. Not only does it offer the EU a path to profitably meet its future energy demands and climate targets, especially among those Visegrád Group (Czechia, Poland, Slovakia, and Hungary) States slow to adopt renewables,[57] but it presents a vision of energy independence and reliable trading

[49] B. Riegert, EU will mit Chinas "Neuer Seidenstraße" konkurrieren. Deutsche Welle. 1 December 2021. www.dw.com/de/eu-will-mit-chinas-neuer-seidenstra%C3%9Fe-konkurrieren/a-59980143.

[50] European Commission, Joint Communication to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank: The Global Gateway. 1 December 2021. JOIN (2021) 30 final, p. 2. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021JC0030&from=EN.

[51] M. P. Goodman, A. Thandani, M. Wayland, Global Gateway's infrastructure plan for Africa announced at EU–AU Summit. Center for Strategic and International Studies. 28 February 2022. www.csis.org/analysis/global-gateways-infrastructure-plan-africa-announced-eu-au-summit.

[52] M. Garside, Global cobalt reserves by country 2020. Statista. 16 February 2021. www.statista.com/statistics/264930/global-cobalt-reserves.

[53] R. Rapier, The world's top lithium producers. Forbes. 13 December 2020. www.forbes.com/sites/rrapier/2020/12/13/the-worlds-top-lithium-producers.

[54] Ministère des Mines et de la Géologie, Bauxite: Becoming a World Leading Producer. 2021. https://mines.gov.gn/en/resources/bauxite.

[55] Deutsches Institut für Entwicklungspolitik, Was der europäische Green Deal für die Afrika–EU Beziehungen bedeutet'. 28 September 2020. www.die-gdi.de/die-aktuelle-kolumne/article/was-der-europaeische-green-deal-fuer-die-afrika-eu-beziehungen-bedeutet.

[56] European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A hydrogen strategy for a climate-neutral Europe. 8 July 2020. COM(2020) 301 final, pp. 19–23. https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf. See, on 'green' hydrogen, J. Prest, J. Woodyatt, J. Pettit, Comparing the hydrogen strategies of the EU, Germany, and Australia: legal and policy issues. *Oil Gas & Energy Law Intelligence* 2021, 19(2), paper no. 21, at pp. 19–20.

[57] M. de la Esperanza Mata Pérez, D. Scholten, K. S. Stegen, The multi-speed energy transition in Europe: opportunities and challenges for EU energy security. *Energy Strategy Reviews* 2019, 26: 100415, at p. 2.

prosperity to the Maghreb.[58] Furthermore, it ostensibly offers Europe an avenue to exporting climate ambition through trade, transitioning African primary industry towards fairer and more sustainable methods and encouraging corollaries like green urbanisation, low-pollution business models, and viable agri-food systems to address African food security.[59]

9.3.2 Member State Motivations behind Investment into Africa

Europe's motivations for investing in Africa go beyond the Paris Agreement and Green Deal concerns noted above. Although these are arguably the most significant drivers supranationally, there are important – and distinct – considerations operant at the Member State level. The various approaches of Germany, France, and Spain are illustrative of this point.

9.3.2.1 Germany

Alongside its role as the Eurozone's economic centre of gravity,[60] Germany has also been one of the major drivers behind European climate ambition, owing to a rich tradition of domestic green politics.[61] Domestically, its 2045 net zero target (in partial response to a lawsuit compelling stricter climate action),[62] successful coal phase out,[63] and high rate of renewable generation place it among the world's leading green economies.[64] Although this ambition is a significant motivator for FDI into Africa, pressing energy security concerns are also relevant. As the EU's largest gas consumer,[65] but with a local production capacity meeting barely 10% of demand,[66] Germany was until the onset of the 2022 Russian invasion of Ukraine almost exclusively reliant on Russian natural gas imports. Seeing the consequences of the 2006 Russo-Ukrainian gas conflict, and amid vociferous concerns from allies about the risks of energy dependence, its 2007 Integriertes Energie- und Klimaprogramm (Integrated Energy and Climate Programme) had identified 29 measures to both improve energy efficiency and increase the use of renewable energies, with limited success from a Russian-dependency perspective.[67] 2020's Nationale

[58] A. Bennis, Power surge: how the European Green Deal can succeed in Morocco and Tunisia – European Council on foreign relations. European Council on Foreign Relations. 26 January 2021. https://ecfr.eu/publication/power-surge-how-the-european-green-deal-can-succeed-in-morocco-and-tunisia.

[59] European Commission, Joint Communication to the European Parliament and the Council: Towards a Comprehensive Strategy with Africa. 9 March 2020. JOIN(2020) 4 final, p. 3. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020JC0004&from=EN.

[60] Germany's GDP (US$3.806 trillion) represents just under a third of GDP in the euro area (US$12.933 trillion), see The World Bank – Data, GDP (current US$) – Euro Area, Germany (2021). https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=XC-DE.

[61] See, for example, C. Hager, Green politics, expertise, and democratic discourse in the two Germanies, 1989–2019. *German Politics and Society* 2019, 37(4), at pp. 7–12.

[62] *Klimaschutz-Beschluss*, 1 BvR 2656/18, 24 March 2021.

[63] See, for example, J. Markard, A. Rinscheid, L. Widdel, Analyzing transitions through the lens of discourse networks: coal phase-out in Germany. *Environmental Innovation and Societal Transitions* 2021, 40: 315–331, at pp. 315–331.

[64] International Renewable Energy Agency, Renewable energy statistics 2021 (IRENA, 2021), p. 4; Dual Citizen, Global Green Economy Index 2018 data update. 18 September 2018. https://dualcitizeninc.com/global-green-economy-index/index.php#interior_section_link.

[65] European Commission Directorate-General for Energy, Quarterly report on European gas markets – With focus on financing models of hydrogen projects in Europe. Volume 14(1), 2021, p. 5. https://ec.europa.eu/energy/sites/default/files/quarterly_report_on_european_gas_markets_q1_2021_final.pdf.

[66] K.-O. Lang, K. Westphal, *Nord Stream 2 – A Political and Economic Contextualisation*. Stiftung Wissenschaft und Politik Research Paper, vol. 3, 2017, p. 19.

[67] See Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, Das Integrierte Energie- und Klimaprogramm der Bundesregierung. December 2007. www.bmu.de/fileadmin/bmu-import/files/pdfs/allgemein/application/pdf/hintergrund_meseberg.pdf.

Wasserstoffstrategie (National Hydrogen Strategy) refocused this on green hydrogen, mirroring developments at the EU level during Germany's 2020 Council Presidency with a promised €9 billion in hydrogen funding into the 2030s.[68] This has translated directly into FDI – Germany having agreed a €571 million renewable energy funding agreement with Morocco in late 2019,[69] and having since committed another €100 million to the Sustainable Energy Fund for Africa.[70] Hopes were high that the overwhelming international pressure to divest from Russian energy imports post-February 2022 would compound these efforts, spurring an ambitious Zeitenwende in German renewable energy policy and investment.[71] The phenomenon of 'Scholzing' – named for German Chancellor Olaf Scholz's perceived recalcitrance – has significantly cooled these hopes, however.[72] To this end, and similarly to Germany's dithering foreign and security posture *vis-à-vis* supporting Ukraine's armed resistance, the much hoped for wave of German renewable energy investment (both foreign and domestic) under massive pressure for Russian divestment has yet to fully materialise.

9.3.2.2 France

The other half of Europe's 'twin engine' alongside Germany, France has made rapid advances in its domestic renewable energy since hosting the landmark COP 21 in 2015, committing over €6 billion to the industry under 2021's so-called *Budget Vert* ('Green Budget').[73] Like Germany it is making efforts to export this ambition, although its motivations lie more in a desire to sustain international influence than in energy security concerns. Cognisant of Africa's consistent 5% growth rate, and especially the potential of rapidly expanding Francophone economies like Côte d'Ivoire and Benin, France has emerged as the largest single contributor to the Africa Renewable Energy Initiative, increasing financing from €2 billion to €3 billion in January 2017.[74] Although this has not been wholly seamless – with a 2021 Moroccan hacking scandal against French ministers and the suspension of French energy company Total's €17 billion investment project in Mozambique following Islamist attacks being recent examples[75] – Green Deal investment nonetheless provides a long term framework for regional engagement post-*Françafrique*.[76]

[68] J. Prest et al., Comparing the Hydrogen Strategies of the EU, Germany, and Australia, pp. 34–43.

[69] The North Africa Post, Germany contributes €571 million to Morocco's reforms implementation. 30 November 2019. https://northafricapost.com/35816-germany-contributes-e571-million-to-moroccos-reforms-implementation.html.

[70] AfDB, Germany commits €100 million to SEFA to unlock private investment in renewable energy. Press release, 30 September 2021. https://afdb.africa-newsroom.com/press/germany-commits-euro100-million-to-sefa-to-unlock-private-investment-in-renewable-energy?lang=en.

[71] Cf Dokumentations- und Informationssystem für Parlamentsmaterialien, Deutscher Bundestag (Berlin, 20th Election Period, 19th Sitting, 27 February 2022), pp. 1350–1355. https://dserver.bundestag.de/btp/20/20019.pdf#P.1350; Bundesregierung, Wirtschaftsminister Habeck im Deutschen Bundestag: Energiepolitik – Eine Zeitenwende. 24 March 2022. www.bundesregierung.de/breg-de/aktuelles/energiepolitik-zeitenwende-2020106.

[72] T. Garton Ash, I went viral in Germany for a meme about Scholzing – but the Chancellor's hesitancy over Ukraine is no joke. *The Guardian*, 4 February 2023. www.theguardian.com/commentisfree/2023/feb/03/germany-olaf-scholz-twitter-ukraine.

[73] B. Pompili, B. Le Maire, O. Dussopt, Le Budget Vert: La France est le premier pays au monde à mesurer l'impact du budget de l'Etat sur l'environnement. Press release No. 219, Ministère de l'Économie et des Finances. 30 September 2020.

[74] Ministère de l'Europe et des Affaires étrangères, Climate issues. 2021. www.diplomatie.gouv.fr/en/country-files/africa/climate-issues.

[75] H. Saleh, L. Abboud, Spying allegations strain Morocco's ties with France. *Financial Times*, 25 July 2021. www.ft.com/content/38d2cae9-4aa2-4da0-805e-a71b7c72ab7a.

[76] But see V. Mallet, N. Munshi, D. Pilling, Why Macron's attempt to reset French ties to Africa has hit trouble. *Financial Times*, 27 October 2020. www.ft.com/content/cea9cdd9-c500-41bc-a2ae-2e4c01eaf2e8.

9.3.2.3 Spain

Another major EU Member State with colonial ties to the continent, Spain's geographical proximity to Africa – barely 14 km across the Strait of Gibraltar – positions it ideally to benefit from deeper EU–AU co-operation. As with Germany, much of Spain's investment is tied to the promised hydrogen economy, with two of the four existing Europe-Africa gas pipelines travelling via Spain to Central Europe.[77] Despite green hydrogen not yet being cost-competitive compared with other production methods, hydrogen could viably be produced using wind and solar power at one euro per kilogram as the market develops.[78] With plans for a further two interconnections between Spain and France by 2040,[79] Spain has the potential to fully harness the green hydrogen wave, with North Africa's rich renewable generation potential central to this. Economic outcomes are not the sole driver of Spanish investment, however. With its North African exclaves on the proverbial front line, Spain sees improving economic and social outcomes in the Maghreb, in part through local energy projects, as a means to stemming migration pathways to Europe.[80] Practically, as it fails to consider the complex political, economic, and environmental drivers of European migration, this approach has had little impact. Like France, therefore, Spain's African investments reflect a matrix of domestic and foreign policy concerns.

9.3.3 Case Studies: African Foreign Direct Investment Recipients

9.3.3.1 Morocco

Among the destinations for European climate finance, Morocco is unique both in the scale of its renewable energy production and in its uptake of innovative generation, storage, and transportation technologies. With a 3,500-kilometre coastline offering windspeeds of up to 11 metres per second,[81] and an average of 3,000 hours of direct sunlight annually,[82] Morocco's geography positions it ideally to capitalise on renewable energy. Indeed, it is already doing so, constructing the largest concentrated solar power plant in the world at Ourazazate, which when completed will generate some 580 megawatts of clean electricity.[83] Given the significant input (between 40 and 50 kilowatt hours) required to produce 1 kilogram of green hydrogen,[84] the EU and its Member States have taken an

[77] S. Timmerberg, M. Kaltschmitt, Hydrogen from renewables: supply from North Africa to Central Europe as blend in existing pipelines – potentials and costs. *Applied Energy* 2019, 237: 795–809, at p. 798.
[78] A. van Wijk, F. Wouters, Hydrogen – The bridge between Africa and Europe, in M. P. C. Weijnen, Z. Lukszo, S. Farahani (eds.), *Shaping an Inclusive Energy Transition* (Springer, 2021), p. 98.
[79] J. Jens, A.Wang, K. van der Leun, D. Peters, M. Buseman, *Extending the European Hydrogen Backbone: A European Hydrogen Infrastructure Vision Covering 21 Countries* (Gas for Climate 2050, 2021), p. 13. https://gasforclimate2050.eu/wp-content/uploads/2021/06/European-Hydrogen-Backbone_April-2021_V3.pdf.
[80] Van Wijk and Wouters, Hydrogen – the bridge between Africa and Europe, p. 92.
[81] A. Mohamed, E. Aboubakr, H. El Massaoui, H. El Markhi et al., Renewable energy potential and available capacity for wind and solar power in Morocco towards 2030. *Journal of Engineering Science and Technology Review* (2018) 11(1): 189–198, at p. 191.
[82] T. Kousksou, A. Allouhi, M. Belattar, et al., Renewable energy potential and national policy directions for sustainable development in Morocco. *Renewable and Sustainable Energy Reviews* 2015, 47: 46–57, at p. 52.
[83] Power Technology, Noor Ouarzazate Solar Complex. 6 March 2020. www.power-technology.com/projects/noor-ouarzazate-solar-complex.
[84] G. Kakoulaki, I. Kougias, N. Taylor, et al., Green hydrogen in Europe – A regional assessment: substituting existing production with electrolysis powered by renewables. *Energy Conversion and Management* 2021, 228: 113649, p. 3.

especially keen interest in Morocco's energy transition as a means to fuelling the hydrogen economy.

European investment began to take shape out of 2013 negotiations for the so-called Deep and Comprehensive Free Trade Area (DCFTA). In an EU sustainability impact assessment published in November 2013, it was noted that the DCFTA would be 'one of several forces that [would] influence the environmental developments in Morocco',[85] highlighting how increasing European demand for green products would encourage Morocco's trend towards economic 'greening'.[86] While these negotiations faltered,[87] they forestalled the sizeable European investment to come.

Following DCFTA, in 2015, a consortium of European development banks established the Morocco Sustainable Energy Financing Facility (MorSEFF).[88] With a total budget of €110 million, MorSEFF successfully financed 260 energy-efficiency projects, saving approximately 207,289 megawatts hours of energy and 102,725 tons of carbon dioxide equivalent ($CO_{2\text{-}e}$) emissions per annum.[89] This was followed by the Morocco Green Economy Financing Facility,[90] a €150 million credit line jointly established by the EU and the European Bank for Reconstruction and Development in 2018 to finance small to medium-sized green investment projects, with the aim of fostering a climate-resilient and competitive Moroccan economy.[91]

These investments culminated in 2021–2022 with several major EU–Morocco agreements. The first, a renewed partnership with the EU's so-called 'southern neighbourhood' signed on 26 February, involved European pledges not only to fast track the transition to a circular economy, but to enable Morocco to follow suit by expanding support for indigenous renewable energy targets.[92] The second, the so-called Green Partnership between the EU and Morocco signed on 28 June 2021, marked an important milestone in EU efforts to export the Green Deal.[93] Alongside a 12 million euro payment towards the joint Competitiveness and Green Growth Programme, the EU also announced a 20 million euro financing agreement to advance rural development within the Green Partnership.[94] The third and most impactful agreement came in February 2022, when Morocco was confirmed as the first funding recipient under the Global Gateway Investment Plan, with €1.6 billion

[85] Trade Sustainability Impact Assessment in Support of Negotiations of a DCFTA between the EU and Morocco (Ecorys, 2013), p. 89. http://trade.ec.europa.eu/doclib/docs/2013/november/tradoc_151926.pdf.
[86] Ibid. at p. 95.
[87] European Commission, Overview of FTA and Other Trade Negotiations (June 2021), p. 6. https://trade.ec.europa.eu/doclib/docs/2006/december/tradoc_118238.pdf.
[88] MorSEFF, A Propos de MorSEFF. 2021. www.morseff.com.
[89] A.-S. Holmberg, M. Gaston-Mathé, Paving the way for green energy financing in the Mediterranean. DAI Global Developments. 015 November 2019. https://dai-global-developments.com/articles/paving-the-way-for-green-energy-financing-in-the-mediterranean.
[90] E. G. Berhe, Morocco Green Economy Financing Facility (GEFF), EU External Investment Plan – European Commission. 14 January 2020. https://ebrdgeff.com/morocco_facilities.
[91] Ibid.
[92] European Commission, Joint Staff Working Document: Renewed Partnership with the Southern Neighbourhood Economic and Investment Plan for the Southern Neighbours. 9 February 2021. SWD(2021), 23 final 3, p. 6. https://ec.europa.eu/neighbourhood-enlargement/joint-staff-working-document-renewed-partnership-southern-neighbourhood-economic-and-investment_es.
[93] T. Cabuzel, The EU and Morocco Form a green partnership on energy, climate and the environment ahead of COP 26. Climate Action – European Commission. 28 June 2021. https://ec.europa.eu/clima/news/eu-and-morocco-form-green-partnership-energy-climate-and-environment-ahead-cop-26_en.
[94] Ibid.

allocated to green energy production.[95] Beyond the strictures of this partnership, Morocco is an important testbed for the very future of EU climate outreach. This is also true at the Member State level, with Morocco serving as the main staging point for German and Spanish hydrogen efforts.[96]

For all this promise, political considerations have strained co-operation. After German disquiet in May 2021 over Moroccan claims to the disputed Western Sahara, Morocco recalled its ambassador and suspended German–Moroccan co-operation.[97] Despite tensions subsiding in January 2022 with the return of the Moroccan ambassador to Berlin,[98] as well as Morocco reaffirming its commitment to the Global Gateway Investment Plan in September 2022,[99] the path ahead remains uncertain, particularly given Rabat's sensitivity over the subject. Morocco also faces several other issues that threaten to constrain burgeoning renewable technologies, namely resource demands and environmental impacts. With green hydrogen electrolysis requiring 10–15 litres of freshwater per kilogram of hydrogen output,[100] and given Morocco's dwindling freshwater reserves,[101] seawater desalination is increasingly necessary. As this in turn draws on the power grid, a spiral of resource demand ensues. There is also the longer-term risk that producing hydrogen from electrolysis via solar PV could have a net negative environmental impact. In a life-cycle assessment comparing the production of hydrogen via nuclear energy, steam methane reformation, biomass gasification, solar PV and wind electrolysis, it was found that solar PV had the worst environmental effects given high acidification in the manufacturing phase of the PV panels and the comparatively low efficiency of PV systems,[102] although this technology is advancing.[103] As such, while Morocco is a promising green hydrogen testbed, teething problems and political hurdles remain.

9.3.3.2 Kenya

Kenya offers a similar window into European climate investment, albeit with the key difference of focusing predominantly on green economic transition rather than energy export. While the motivation for investment has a subtly different focus, it nonetheless serves to further the overarching symbiotic relationship between Europe and East Africa; a relationship that has seen European exports to the region grow on average by just under

[95] AFP, EU unveils €1.6 billion investment in Morocco. Deutsche Welle. 9 February 2022. www.dw.com/en/eu-unveils-16-billion-investment-in-morocco/a-60710607.
[96] See above at Sections 9.3.2.1 and 9.3.2.3.
[97] N. Záboji, F.A.Z. Exklusiv: Wichtige Wasserstoff-Allianz Wackelt. Frankfurter Allgemeine Zeitung, 25 May 2021. www.faz.net/aktuell/wirtschaft/klima-energie-und-umwelt/wichtige-wasserstoff-kooperation-mit-marokko-wackelt-17356427.html.
[98] S. Kasraoui, Morocco's Ambassador to Germany to return to Berlin this week. Morocco World News, 24 January 2022. www.moroccoworldnews.com/2022/01/346709/moroccos-ambassador-to-germany-to-return-to-berlin-this-week.
[99] O. Latrech, Morocco Reaffirms Support to EU's 'Global Gateway' strategy. Morocco World News, 22 June 2022. www.moroccoworldnews.com/2022/06/349853/morocco-reaffirms-support-to-eus-global-gateway-strategy.
[100] M. Noussan, P. P. Raimondi, R. Scita, M. Hafner, The role of green and blue hydrogen in the energy transition – a technological and geopolitical perspective. *Sustainability* 2020, 13(1): 298, at p. 5.
[101] The World Bank – Data, Renewable internal freshwater resources per capita (cubic meters) – Morocco. 2021. https://data.worldbank.org/indicator/ER.H2O.INTR.PC?locations=MA.
[102] A. Al-Qahtani, B. Parkinson, K. Hellgardt, N. Shah, G. Guillen-Gosalbez, Uncovering the true cost of hydrogen production routes using life cycle monetization. *Applied Energy* 2021, 281: 115958, at p. 2.
[103] Energy Matters, New solar cell breakthrough to create higher panel efficiency. 11 March 2020. www.energymatters.com.au/renewable-news/new-solar-cell-breakthrough-to-create-higher-panel-efficiency.

4% annually since 2010 (to €3.6 billion in 2020).[104] To fully understand these investments, it is first important to understand how climate change has affected Kenya's economy.

In a plight common to many nature-based economies, Kenya is feeling the effects of climate change through a steadily declining resource base. As Katrin Hagemann, acting Head of the EU Delegation to Kenya, observed in a July 2021 editorial:

> [Kenya's] wealth of natural capital, biodiversity, wildlife and marine ecosystems are under increasing strain by population growth and the imbalance between economic growth and environmental sustainability objectives, as seen in land degradation, deforestation, wildlife poaching and overfishing.[105]

The reason why these factors have had such a profound impact on Kenya's economy lies in the State's geography. Approximately 80% of Kenya is semi-arid, with only 20% comprising viable agricultural land.[106] Moreover, the effects of overfishing, temperature increases, irregular precipitation, sea-level rise, and ocean acidification have also combined to gravely threaten Kenya's marine ecosystems.[107] These circumstances, together with an all-time high in trade between the East African Community (EAC) and the EU, have been key to promoting climate investments in Kenya.

Since the Kenyan government's first Paris Agreement nationally determined contribution (NDC) in December 2016,[108] Kenya has received substantial investments from Europe encouraging energy transition and climate resilience. Between 2014 and 2020, the European Development Fund (EDF) provided some €435 million in tied aid under the Multiannual Indicative Programme (MIP),[109] with €190 million being diverted towards food security and resilience, and €175 million put towards sustainable infrastructure projects including solar and wind farms.[110] This funding has helped promote environmentally sustainable initiatives like the AgriFI Kenya Challenge Fund, which since 2018 has created more than 10,000 jobs in environmentally sustainable and climate-smart agriculture.[111] Kenya also received further technical assistance and investment grants from the EU–Africa Infrastructure Trust Fund in December 2017 towards construction of the Kenya Green Mini-Grid Facility, totalling €5.65 million.[112] Following on from the EDF's 2014–2020 MIP, the EU and EAC met in April 2021 to align their priorities for the MIP period 2021–2027.[113]

[104] European Commission Directorate General for Trade, European Union, Trade in goods with ACP – East African Community (EAC),. 2021, p. 3. https://webgate.ec.europa.eu/isdb_results/factsheets/region/details_acp-east-african-community-eac_en.pdf.

[105] K. Hagemann, Green Deal at the heart of Kenya's green transition and resilience. European Commission, 22 July 2021. https://ec.europa.eu/newsroom/intpa/items/715970/en.

[106] K. N. Bernard, State of forest genetic resources in Kenya (Working Paper, The sub-regional workshop FAO/IPGRI/ICRAF on the conservation, management, sustainable utilization and enhancement of forest genetic resources in Sahelian and North-Sudanian Africa, 22–24 September 1998). www.fao.org/3/ab396e/ab396e.pdf.

[107] A. Tuda, M. Omar, Protection of marine areas in Kenya. *The George Wright Forum* 2012, 29(1): 43–50, p. 47.

[108] Ministry of Environment and Forestry, Kenya's updated nationally determined contribution (Office of the Cabinet Secretary, 24 December 2020). www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Kenya%20First/Kenya%27s%20First%20%20NDC%20(updated%20version).pdf.

[109] European Court of Auditors, EU development aid to Kenya (Special Report, No 14, 2020), p. 4. https://op.europa.eu/publication/manifestation_identifier/PUB_QJAB20013ENN.

[110] Ibid. at p. 34.

[111] AgriFI Kenya Challenge Fund, About the AgriFI Kenya Challenge Fund. 2020. https://agrifichallengefund.org/about-the-agrifi-kenya-challenge-fund.

[112] European Investment Bank, EU–Africa Infrastructure Trust Fund Annual Report 2017 (European Investment Bank, 2018), p. 47. www.eib.org/en/publications/eu-africa-infrastructure-trust-fund-annual-report-2017.

[113] East African Community Secretariat, EAC and EU set to align development priorities for 2021–2027. Press release, 27 April 2021. www.eac.int/press-releases/155-resource-mobilization/1982-eac-and-eu-set-to-align-development-priorities-for-2021-2027.

The draft proposal identified three priorities for Kenya: (1) green transition and resilience, including green jobs and green energy; (2) ensuring that any such transition is equitable; and (3) promoting good governance, security and peace.[114]

Despite these significant achievements, and as with Morocco, there have been some setbacks. The real efficacy of the EDF's 2014–2020 MIP has been a notable sticking point. In a 2020 European Court of Auditors report it was found that the EDF's €435 million 'covered only a small fraction of Kenya's development needs and was spread across many areas'.[115] It was also found that the €175 million allocated towards infrastructure was insufficient to implement all the proposed projects; the energy sector alone had an annual infrastructure financing need of €1.69 billion.[116] Moreover, the report indicated that those funds that had been directed towards energy infrastructure development had been unilaterally so directed as a result of EU policy, rather than at the Kenyan government's request.[117] This tension, between climate finance as a diplomatic tool and as a meaningful vehicle for decarbonisation, goes beyond the Kenyan example to the whole Afro-European relationship. As such, the EU has several lessons to learn. Whether it chooses to commit further funding and meaningfully consult with the Kenyan government will ultimately determine the success of not only the 2021–2027 MIP, but future investments into Kenya, the wider EAC, and Africa generally.

9.3.3.3 South Africa

European climate investments into South Africa have not been as successful as efforts in Morocco and Kenya largely thanks to the country's continued reliance on coal for energy production. Despite ratifying the Paris Agreement,[118] South Africa remains reliant on fossil fuel energy sources, and was Africa's largest coal producer (and the world's seventh largest) in 2020.[119] Coal is fundamental to the South African energy matrix, totalling nearly 88% of all energy production in 2019 where renewable sources supplied just under 7%.[120] This reliance means that 80% of the nation's emissions are traceable to energy use, with 45% coming exclusively from domestic coal-generated electricity.[121]

Despite this, South Africa has made several agreements with the EU, fielding several investments promoting green economic transition. The earliest of these dates to the EU's 2007 strategic partnership joint action plan, which enshrined broad climate change co-operation and established the Mogôbagôba policy dialogue.[122] South Africa has also received investments under the EU's €241 million 2014–2020 MIP allocation,[123] and most recently benefitted from the EU's Urban Low Emission Development Strategies

[114] Hagemann, Green Deal at the heart of Kenya's green transition.
[115] European Court of Auditors, EU development aid to Kenya, p. 4. [116] Ibid. at p. 25. [117] Ibid. at p. 26.
[118] Department: Forestry, Fisheries & the Environment, South Africa joins nations of the world in ratifying the Paris Agreement on climate change. Press release, 2 November 2016. www.environment.gov.za/mediarelease/southafrica_ratifies_parisagreement.
[119] *Statistical Review of World Energy 2020* (British Petroleum, 69th ed, 2020), p. 46. www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2020-full-report.pdf.
[120] IEA, Total primary energy supply. 2021. www.iea.org/regions/africa.
[121] Department of Planning, Monitoring and Evaluation, NPC Economy Series: Energy (Discussion Paper, version 1.0, January 2018), p. 28. www.gov.za/sites/default/files/gcis_document/201802/npc-energy-paper.pdf.
[122] European Council, The South Africa–European Union Strategic Partnership Joint Action Plan (15 May 2007), 9650/07 (Presse 105), pp. 5–6. https://data.consilium.europa.eu/doc/document/ST-9650-2007-INIT/en/pdf.
[123] E. G. Berhe, South Africa, International Partnerships – European Commission (27 September 2019). https://ec.europa.eu/international-partnerships/where-we-work/south-africa_en.

(Urban-LEDS) project. Despite receiving just under 18% of an initially allocated €6.7 million budget,[124] Urban-LEDS succeeded in not only encouraging green municipal infrastructure financing,[125] but in changing some perceptions of renewable energy usage (if only on a small scale). This was reflected in shifted political will among participating South African mayors regarding energy-efficient living,[126] and has been exemplary especially for those participating communities that previously had limited electricity access.[127]

9.4 Africa's Contested Energy Future

Europe is far from alone in identifying Africa's huge potential as an energy partner. Given the continent's above-mentioned resource wealth, and the prospects of local investments yielding huge returns as African industrialisation accelerates, its energy future has become subject to something of an international tug-of-war. Central to this contest, alongside Europe, is the PRC. The pressing question is how PRC priorities – both political and economic – will interact with Europe's climate-positive investment profile and the growing African climate ambition.

9.4.1 People's Republic of China Investment into Africa

Just as with the recent European diplomatic offensive mounted against African States, the PRC has made no secret of its designs on energy co-operation with the continent. In his opening address to the 2018 Beijing Summit of the Forum on China–Africa Co-operation, PRC Paramount Leader Xi Jinping declared:

> [The PRC] will work with Africa to pursue green, low-carbon, circular and sustainable development … We will strengthen exchange and co-operation with Africa on climate change, clean energy, prevention and control of desertification and soil erosion, protection of wildlife and other areas of ecological and environmental preservation. Together, we could make [the PRC] and Africa beautiful places for people to live in harmony with nature.[128]

These are not mere abstractions. Since 2000, FDI from the PRC into Africa has risen from US$149 million to some US$3.1 billion in 2020, with a of total US$53 billion invested in that period and an average annual investment of US$4.6 billion since 2010.[129] It is easily the continent's largest source of overall FDI, more than doubling United States investment in 2019.[130] The truth of Xi's green sentiments is less resolute, however. As with Europe's green focus, the targets of PRC investment are demonstrative of similarly longstanding

[124] E. Kessler et al., Final evaluation: promoting low emission urban development strategies in emerging economy countries. Final Evaluation, 2016, p. 39. https://smartnet.niua.org/sites/default/files/resources/Urban%20LEDS%20Final%20Evaluation%2022%20Dec%202016.pdf.
[125] Ibid. at p. 34. [126] Ibid. at p. 19. [127] Ibid. at p. 20.
[128] J. Xi, speech at opening ceremony of 2018 FOCAC Beijing Summit, 3 September 2018. www.xinhuanet.com/english/2018-09/03/c_129946189.htm.
[129] Boston University Global Policy Centre, China's global energy finance. 2021. www.bu.edu/cgef/#/all/Country-EnergySource.
[130] P. Madden, Figure of the week: foreign direct investment in Africa, (Brookings Blog, 9 October 2019).www.brookings.edu/blog/africa-in-focus/2019/10/09/figure-of-the-week-foreign-direct-investment-in-africa. On renewable energy FDI, see Figure 9.2.

national priorities, chiefly the acceleration of domestic economic growth. From the beginning of Deng Xiaoping's economic reforms, the PRC's rapid development has been predicated in large part upon construction and industrialisation. While Australian iron ore and coal have underpinned the bulk of this, Africa's role as an energy and materiel supplier is not insignificant.

Behind construction (just under 29%), mining (just over 26%) was the largest source of PRC FDI into the continent in 2016, with investments in sectors like information technology making up a mere 5%.[131] Such is the importance of African extractive industry that when Guinea – a key bauxite supplier – was rocked by a September 2021 coup, the PRC broke with its usually resolute non-interference policy to publicly oppose the interim government,[132] having already seen regime instability complicate resource deals in West Africa and the Sahel.[133] Alongside iron ore and bauxite imports, one of the PRC's main focuses is on controlling those elements essential to digital technology. Building on its rare earth mineral monopoly – controlling some 90% of the world's supply – it has purchased majority shares in South African lithium holdings, as well as mines representing more than half of the DRC's cobalt mining output, among other pursuits.[134] These linkages will be essential as the PRC's domestic technology industry continues to grow.

The PRC's investment profile can by no means be attributed solely to self-interest, however. Funding for continental energy capabilities, alongside infrastructural support, has emerged as a central pillar of BRI-era FDI. Although these investments, like those in mining, have not generally prioritised climate change imperatives, this trend is changing. Of the US$24.361 billion invested in African energy since the conclusion of the Paris Agreement, US$15.4 billion has been put into natural gas, coal, and oil projects, whereas only US$8.961 billion has gone towards renewables.[135] Although only a negligible US$361 million of this has been put towards solar and wind power in that time, the growing stake of hydropower is to be commended, equalling fossil fuel investments between 2000 and 2020 (Figure 9.1).[136]

9.4.2 Comparing Europe and the People's Republic of China

9.4.2.1 European Motivations

For Europe, almost irrespective of the language of 'sustainable development' and 'energy justice' (although these do factor into the political calculus), investment in Africa is future-oriented. By committing to renewable capabilities in North Africa in particular but across the continent more widely, Europe and its Member States are creating for themselves a massive energy generation capability directly bordering the continent. Coupled with

[131] E. Megbowon, C. Mlambo, B. Adekunle, Impact of China's outward FDI on Sub-Saharan Africa's industrialization: evidence from 26 countries. *Cogent Economics & Finance* 2019, 7(1): 1681054, p. 4.
[132] O. Eguegu, Does Guinea's coup matter to China? The Diplomat, 21 September 2021. https://thediplomat.com/2021/09/does-guineas-coup-matter-to-china.
[133] J. Nyabiage, Guinea coup adds to growing knots in China's belt and road plans. *South China Morning Post*, 12 September 2021. www.scmp.com/news/china/diplomacy/article/3148473/guinea-coup-adds-growing-knots-chinas-belt-and-road-plans.
[134] Institute for Energy Research, China Dominates the global lithium battery market. 9 September 2020. www.instituteforenergyresearch.org/renewable/china-dominates-the-global-lithium-battery-market.
[135] Boston University Global Development Policy Center, China's global energy finance database. 2022. [136] Ibid.

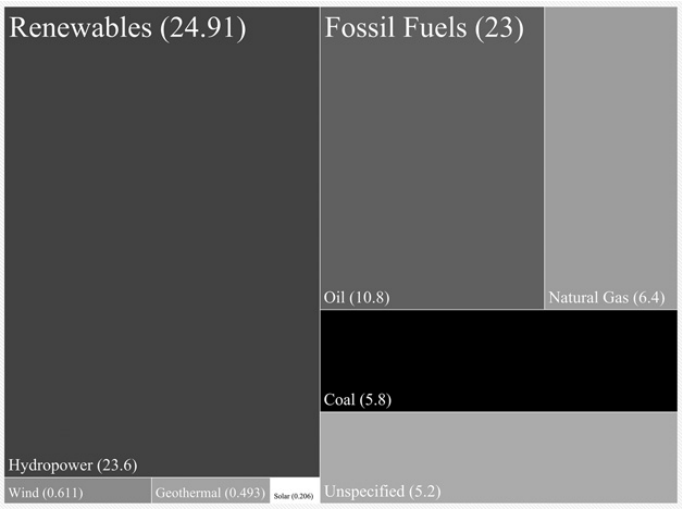


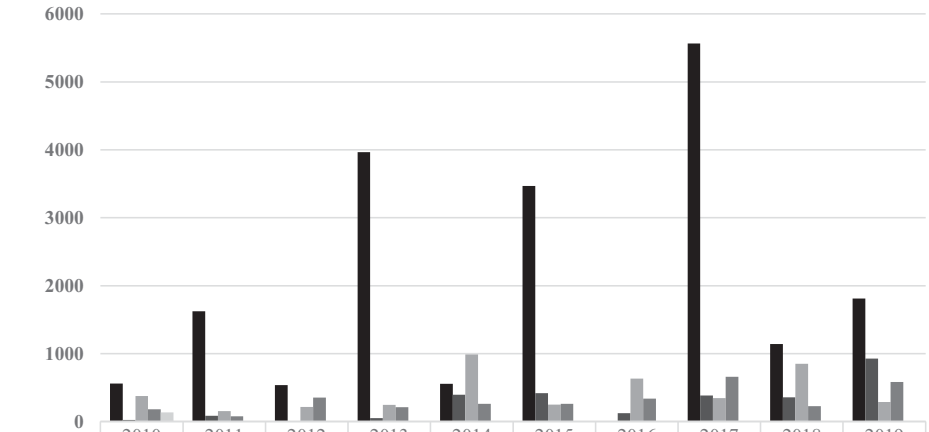
Figure 9.1 PRC energy finance flows to Africa 2000–2020 (constant US$ billions).
Source: Boston University Global Development Policy Center, China's global energy finance database (2022). www.bu.edu/cgef.

growing investment in interconnector projects like Elmed,[137] and European commitments to hydrogen technology, African renewable energy offers a viable path towards energy security. Ongoing concerns – both political and environmental – over reliance upon Russian natural gas and stigmas surrounding civilian nuclear energy only encourage this (Figure 9.2).

Investing so heavily in African renewable energy also carries major economic potential by ensuring a future supply of ready-made trading partners. As Europe advances the Green Deal and establishes measures like the Carbon Border Adjustment Mechanism (CBAM),[138] African States nurtured in its green image will be ideally placed for deeper trading relationships. This goes beyond energy – more prosperous African middle classes, enriched by domestic renewable generation and European investment, will have a greater appetite for goods and services. An underlying hope in some quarters is that by promoting African socioeconomic growth, State stability will improve, thereby lowering or even eliminating their diplomatic advantage over Mediterranean EU States in relation to immigration controls.[139] Although African States are not *necessarily* victimised by this transaction, the long-term benefits for Europe are much greater.

Lastly, green investment in Africa has an important political function, as a major offensive in the EU's effort to export its climate policy vision. Seeing itself as a norm-entrepreneur, investment incentivises African States to follow Europe's lead on issues like emissions

[137] S. Matalucci, Elmed Interconnector aims to bring solar power from the Sahara to Europe. Deutsche Welle. 24 May 2019. www.dw.com/en/elmed-interconnector-aims-to-bring-solar-power-from-the-sahara-to-europe/a-48843725.
[138] European Commission, Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism (14 July 2021), COM(2021) 564 final. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021PC0564&from=en.
[139] Van Wijk and Wouters, Hydrogen – the bridge between Africa and Europe, p. 92.



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
PRC	559.05	1624.93	535.04	3967.19	557.12	3467.53	0	5565.15	1139.75	1812
EU	24.97	86.46	0	49.3	393.15	418.93	122.19	383.25	356.42	926.01
Germany	374.82	153.83	215.22	244.59	989.8	249.83	630.75	346.36	851.44	286.52
France	181.52	77.52	351.29	210.51	260.98	262.43	336.58	659.03	225.77	580.55
Spain	134.74	0.28	0.23	0.18	0.46	0.26	0.63	0.35	1.04	0.14

Figure 9.2 Renewable energy finance flows to Africa pre-COVID (2010–2019, constant 2019 US$ millions).
Source: Boston University Global Development Policy Center, China's global energy finance database (2022). www.bu.edu/cgef.

trading, carbon accounting, and hydrogen certification, in turn drawing momentum away from international alternatives.

9.4.2.2 People's Republic of China Motivations

PRC investment in Africa is as equally motivated by future prosperity as Europe, if for different reasons. Where Europe has committed itself to the Green Deal and designs on global climate policy leadership, the PRC has, at least in the short to medium term, committed itself to fossil fuels domestically, having until 2030 to reach its peak NDC-enshrined carbon output.[140] As the world's largest consumer of coal, and second largest of oil, promises of green transition have given way to increasing usage of both after a dip in the mid 2010s. Diplomatic tensions with historic major supplier Australia have necessitated diversification in supply, with Africa helping to partly redress that difference.[141] Hydrocarbon deposits exemplify this: whilst only accounting for just over 7% of the world's proven oil reserves,[142] predictions of future discovery in Africa have driven greater PRC

[140] L. Myllyvirta, Analysis: China's new 2030 targets promise more low-carbon power than meets the eye. Carbon Brief. 15 December 2020. www.carbonbrief.org/analysis-chinas-new-2030-targets-promise-more-low-carbon-power-than-meets-the-eye.
[141] N. Sambhi, Military coup could cruel China's plans for mining in Guinea. ASPI Strategist. 16 September 2016. www.aspistrategist.org.au/military-coup-could-cruel-chinas-plans-for-mining-in-guinea.
[142] Statistical Review of World Energy 2020, p. 14.

engagement with States like Angola and South Sudan[143] (18% of the PRC's oil imports having come from Africa in 2020).[144]

As in Europe, the PRC is also motivated by the economic imperative of building a reliable pool of future trading partners, although one predicated partly upon fossil fuels. Encouraging coal mining and fossil fuel generation has an important advantage in this regard – ease. Where European investment is tied to energy transition, and thereby costly transformative change to things like grid infrastructure, money from the PRC has the benefit of building upon existing systems. This is so even considering the PRC's 2021 announced cessation of overseas coal-fired power plant funding, which has the potential to vitiate some US$50 billion in global FDI.[145] Taking its place in the PRC investment profile is hydropower, which integrates into existing power infrastructure much easier than wind and solar,[146] both of which have received negligible funding (Figure 9.1).[147] For those African States with low rates of electrification, infrastructural constraints, and limited funding, such ease is hugely appealing.

None of this is to say that claims by figures such as Xi Jinping to 'promot[ing] the transition to green and low-carbon development' are totally baseless,[148] of course. Alongside hydropower, the PRC is the world's largest supplier of solar PV technology by some distance,[149] and among the leaders in patent filings for renewables.[150] Despite the significant environmental and wildlife concerns tied to hydroelectric damming,[151] projects like the Bui Dam in Ghana have nonetheless complied with environmental and social impact assessments.[152] But cynicism remains. Partly, this is due to suspicions that the PRC's green turn has been equally motivated by a desire to capitalise on United States vacillations, set against a longer-lens view of great power contest. Mostly, however, it stems from a perception that PRC climate action is largely tokenistic. Promises of net zero by 2060 and ceasing coal-fired FDI are caveated significantly by domestic inaction and an emissions

[143] D. H. Shinn, Africa, China, the United States, and oil. Center for Strategic & International Studies. 8 May 2007. www.csis.org/analysis/africa-china-united-states-and-oil; China Power, How Is China's Energy Footprint Changing? (30 January 2021). https://chinapower.csis.org/energy-footprint.

[144] J. Nyabiage, Why is China looking beyond Africa for oil supplies? *South China Morning Post*, 5 September 2020. www.scmp.com/news/china/diplomacy/article/3100367/why-china-looking-beyond-africa-oil-supplies.

[145] D. Stanway, J. Brock, China's overseas coal power retreat could wipe out $50 billion of investment. Reuters. 22 September 2021. www.msn.com/en-za/news/world/china-s-overseas-coal-power-retreat-could-wipe-out-50-billion-of-investment/ar-AAOGPtH.

[146] See, for example, IEA-ETSAP and IRENA, Renewable energy integration in power grids (Technology Brief, E15, April 2015). www.irena.org/-/media/Files/IRENA/Agency/Publication/2015/IRENA-ETSAP_Tech_Brief_Power_Grid_Integration_2015.pdf.

[147] Boston University Global Policy Centre, China's global energy finance. 2021. www.bu.edu/cgef/#/all/Country-EnergySource.

[148] Embassy of the PRC in the Republic of Botswana, Xi Jinping attends and delivers an important speech at the 13th BRICS Summit. 10 September 2021. http://bw.china-embassy.org/eng/zfgx/t1906191.htm.

[149] Seven of the top 10 largest PV manufacturers are based in the PRC; see Solar Edition, Top 10 PV module manufacturers in 2020, based on their module shipment. 4 February 2021. https://solaredition.com/top-10-pv-module-manufacturers-in-2020-based-on-their-module-shipment.

[150] The PRC is second overall in wind power patents, behind Denmark, and third in overall renewable energy patents, behind Japan and the United States; see J. Nurton, Patenting trends in renewable energy. *World Intellectual Property Organization Magazine*, March 2020. www.wipo.int/wipo_magazine/en/2020/01/article_0008.html.

[151] See, for example, B. Teffera, B. Assefa, G. Assefa, Assessing the life cycle environmental impacts of hydroelectric generation in Ethiopia. *Sustainable Energy Technologies and Assessments* 2020, 41: 100795.

[152] K. A. Tsikudo, Soft powering the China water machine: the Bui Dam and China–Ghana relations. *Canadian Journal of African Studies* 2022, 56(2): 319–339, at p. 327; P. W. K. Yankson, A. B. Asiedu, K. Owusu, F. Urban, G. Siciliano, The livelihood challenges of resettled communities of the Bui Dam project in Ghana and the role of Chinese dam-builders. *Development Policy Review* 2018, 36(S1): O4762O494, at pp. O480–O481.

profile which has shown almost no sign of shrinking.[153] African natural gas, oil, and extractive coal investments are central to this.

9.4.2.3 Destined for Conflict?

Europe and the PRC are not fundamentally at odds in their pursuits of African climate investment. Both have made significant verbal commitments to green transition domestically and internationally, and demonstrated their intent with funding for major projects across the continent. Where they do diverge is the degree of this commitment, with inevitable consequences for African FDI recipients. On the one hand, Europe is investing on the basis of energy transition and a green future, if more for its own benefit than for that of Africa. On the other hand, the PRC is investing in Africa at least partly to perpetuate fossil fuel supply chains, sustaining its own economic growth while simultaneously nurturing future trading partners. African States are left to choose. Of course, the choice is not wholly balanced – for States like sun- and wind-rich Morocco, or hydrocarbon-rich Nigeria, natural alignment to European or PRC energy philosophies makes choosing easier. It is also by no means mutually exclusive – African States remain equal and sovereign agents, able to freely court investment from both sides as they see fit. But the choice remains.

By choosing to follow the EU's climate policy philosophy, and accepting investments geared towards energy transition, African States can mitigate the adverse effects of the CBAM on trade and gain increasingly greater access to the common market. This, in turn, disincentivises both fossil fuel energy and – eventually – fossil fuel trading, abstracting these States from deeper PRC engagement in the medium term. Conversely, accepting PRC investments and committing further to fossil fuels makes trade with the EU more difficult, but makes energy and resource trade with the PRC much more lucrative. It also opens the way further for crucial infrastructural support under the BRI, which the EU is unable to match. This divergence is only likely to be exacerbated by growing European climate ambition and the resultant pressure on other international actors to follow suit.

In the result, conflict between the PRC and Europe is not especially concerning as between them. It is in Africa that any adverse effects will be felt, and not just environmentally. As the AGN has repeatedly sought to impress upon the world, climate change is a real and present danger for Africa. The transition to green energy is an inevitable one. As such, those States that choose to meet PRC fossil fuel demands in the short term – that is, before the 2030 NDC emissions cap – stand to suffer the most. In that short term, trade opportunities with Europe and other regions imposing CBAMs will decrease. Continental market integration, which is already relatively weak,[154] could suffer as the divide between more and less climate-proactive States grows. Assuming the PRC follows through with its NDC and reduces emissions post-2030, these same States will be left doubly disadvantaged,

[153] D. Blackmon, China drives dramatic rise in global emissions in 2021. Forbes. 26 August 2021. www.forbes.com/sites/davidblackmon/2021/08/26/china-drives-dramatic-rise-in-global-coal-usage-in-2021/?sh=1cb37f2e3193; on the implications of ongoing coal reliance, see *The Guardian*, How bad is China's energy crisis? (29 September 2021). www.theguardian.com/world/2021/sep/29/how-bad-is-chinas-energy-crisis.

[154] H. Fofack, A competitive Africa. *Finance & Development* 2018, 55(4): 48+, at pp. 48–51.

lacking a ready market for fossil fuels while being left some 10 years behind the rest of the continent in their energy transition.

Regardless of a degree of self-interest, European climate investments in Africa are fundamentally motivated by the aim of achieving Paris Agreement goals through energy transition. Investment is therefore a major vehicle for exporting climate policies to the continent. Whether this will be successful will in no small part depend upon the course charted by the PRC. If its current behaviour – defined by inconsistencies between domestic and international action, and caveats to otherwise significant pledges – persists, African FDI recipients will be left at a long-term economic and environmental disadvantage. Conversely, if these gestures are meaningfully actioned, and accompanied by efforts to curb domestic fossil fuel consumption and incentivise energy transition through FDI, an international 'race to zero' might truly begin, with Africa involved from the outset.[155]

9.5 Conclusion

Africa has made massive progress in the field of climate policy across the last three decades, perhaps more than any other region. From aspirational declarations and programmes in the late 1980s and early 1990s, set against an otherwise disparate body of continental climate policy and action, the AGN has emerged as a major actor in the global climate regime. Spurred in large part by the Paris Agreement, this diplomatic momentum has given way to focused FDI attention, with Africa now sitting at the centre of a crucible of climate investment.

Europe – both supranationally and in its Member States – has been a leading proponent of this investment drive. In its effort to export the Green Deal, establish a viable international green economy, and pioneer the norms upon which that economy is based, Europe has negotiated an array of agreements with African States. While much of this FDI has been directed towards promoting energy transition, such as in Morocco and Kenya, Europe is also ensuring its future energy security by the same token. The renegotiated Cotonou Agreement is expected to further entrench these green ambitions in the continent-to-continent relationship.

The EU is not the only actor seeking to impress itself upon Africa's energy transition, however. The PRC has made similar inroads, albeit on a different climate footing. Unlike Europe, which is motivated by a desire to pioneer international climate policy, PRC investments are largely focused on securing supply lines and future prosperity. Despite a growing hydro-energy focus, and promising developments such as the decision to cease overseas coal-fired power plant funding, the PRC's climate ambition is substantially weaker than that of Europe, as evidenced by ongoing support for Africa's oil, gas, and extractive industries.

As this chapter has sought to explain, to characterise simultaneous European and PRC investments in Africa as 'competitive', or as marked by any significant degree of tension, is misguided. Rather, these investments reflect divergent philosophies of energy transition. Where European investment is predicated upon green energy transition, particularly the transformative change inherent in solar PV, wind, and hydrogen, PRC investment is marked

[155] See UNFCCC Secretariat, Cities, regions and businesses race to zero emissions. Press release, 5 June 2020. https://unfccc.int/news/cities-regions-and-businesses-race-to-zero-emissions.

by a short-term support for fossil fuels and an inclination towards less disruptive renewable investments like hydropower. The result, whereby PRC investment feeds into a continued hydrocarbon dependence among some African States, presents a major hurdle to European visions of nurturing a green Africa. In offering itself as a short-term harbour for fossil-fuel dependent and economically vulnerable African economies and extending much-needed infrastructure funding under the BRI, the PRC has firmly established itself in the African market. The consequence is that, as long as the PRC's ambitious climate rhetoric is belied by practical support for fossil fuels and extractive industry, a division will be perpetuated between those African States transitioning to renewables and those remaining reliant on fossil fuels. This divide will only harm Africa's continental integration and energy transition.

Europe has made clear that it sees Africa as a key partner towards achieving its Paris Agreement goals. The PRC has, at least in much of its rhetoric, espoused similar sentiments. The difference lies in their actions. As long as this discord persists, the long-term disadvantages for those African States which court fossil fuel investments will mount. It will fall to the PRC, and the sincerity of its climate policy commitments, to determine whether European climate ambition will find a willing partner or a halting adversary in Africa.