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Solar extraversion: incumbent interests, foreign capital and the making of Morocco's megaproject strategy

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ABSTRACT

Solar energy is widely expected to decentralize electricity production but lower- and middle-income countries (LMICs) governments can opt for centralized megaprojects instead. In Morocco, decentralized generation and self-production is legalized, but the state, foreign donors, and private investors instead prioritized the Noor Ouarzazate complex, the world's largest concentrated solar power plant. We argue that this outcome is better explained by the political economy of the power market than predispositions of authoritarian or centralized states. Incumbent producers and distributors and their institutional relays blocked reform within a fragmented state lacking adjudication mechanisms. Megaprojects offered the returns of strategic 'extraversion': concessional finance and geopolitical standing mobilized for domestic ends, though these returns proved fragile. Against the dichotomy of 'authoritarian environmentalism' and 'energy democracy', we propose a national-scale political economy sitting between global capital and local impact, and show that the scale of evaluation shapes what counts as success.

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1. Introduction

The shift towards renewable energies is generally expected to favour decentralized electricity production and create opportunities for more democratic forms of energy governance. Yet, across parts of the Global South, some governments have invested in large, centralized renewable megaprojects instead.

The Noor Ouarzazate Solar Complex illustrates this puzzle. Backed by \$2.5 billion in funding from international lenders, the largest concentrated solar power (CSP) installation in the world was designed as the cornerstone of Morocco's green energy strategy. Despite initial enthusiasm, Noor was later criticized for creating minimal local benefits, and as its cutting-edge technology underperformed and its implementing agency accumulated debts, the country's technological and financial choices were questioned.¹ The Noor experience underscores the complex trade-offs governments face when trying to shift away from fossil fuels.

Out of concern for 'economic efficiency, [...] consumer welfare, national security, and industrial growth', most states have from the 1920s onwards relied on state-owned national energy utilities to

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manage energy production and distribution (Lee & Usman, 2018, p. 10). While these state-led approaches were long an orthodoxy, various countries began liberalizing energy sectors in the 1970s to establish competitive power markets, encouraged by international finance donors (Bensch, 2019; Gabriele, 2004; Hall & Nguyen, 2017). In these new, 'hybrid' power markets (Gratwick & Eberhard, 2008), foreign investment, new technologies, and promises of green growth intersect with regional geopolitics, domestic political constraints, local contestation, and environmental risk. In this context, the transition to renewable energy necessarily involves the reconfiguration of political and economic relationships across multiple scales and stakeholders (Newell, 2021).

Such large-scale realignments of capital and resources constitute a major developmental challenge that has rekindled longstanding debates within the social sciences on which characteristics, strategies and policies – democratic vs. authoritarian, centralized vs. decentralized, state-led vs. private sector-led – are most effective at bringing about social and economic development (Sen, 2014).

At first glance, the global shift towards energy market liberalization appears to align with the structural nature of renewable energy production. Unlike highly concentrated electricity production from oil, gas, nuclear, or coal-fired power plants, wind, solar, tidal, biomass, or geothermal energy usually involves a larger number of distributed lower capacity plants (Alanne & Saari, 2006). Thus, large-scale adoption of renewables implies greater decentralization of electricity production, and a greater role for private, independent power producers (Lilliestam & Hanger, 2016). This is said to hold the promise of 'more participatory forms of energy provision and governance', in what is often referred to as 'energy democracy' (Becker & Naumann, 2017, p. 1).

Despite the potential for renewables to promote decentralized energy production, many countries in the Global South have gravitated towards top-down, centralized megaprojects (Burke & Stephens, 2018; Hancock & Sovacool, 2018). At first glance this can be explained by regime type. In autocratic or semi-democratic states, megaprojects offer greater political control and facilitate rent-seeking opportunities by connecting domestic elites and globalized capital, while democratic countries appear more likely to embrace paths towards 'energy democracy' (Cantoni & Rignall, 2019; Gilley, 2012; Huda, 2022; Jenss & Schuetze, 2024; Uzar & Eyuboglu, 2024). Yet, this does not fit neatly with the empirical record as various regimes pursue different strategies and the symbiotic relationship between decentralization and democracy appears far from certain (Braunstein et al., 2023), highlighting that there is still a 'need for a much better understanding of the relationship between technological and political decentralisation' (Baker et al., 2021, p. 103).

This article takes up this call by asking why LMICs such as Morocco avoid decentralized alternatives even when these were formally enacted in law and what underlies the pursuit of the centralized path in practice. Drawing on interviews with public officials, donors, diplomats, and other experts on the Moroccan energy sector, and employing a case study of Morocco's solar strategy, we find that dichotomous views of 'authoritarian environmentalism' and 'energy democracy' can obscure the political complexities of how governments adjudicate between centralized and distributed options. Existing scholarship has produced important insights into the roles of regime type, colonial legacies, state-society relations (in particular at the local level), geopolitics, and global political economy (Aoui et al., 2020; Cantoni & Rignall, 2019; Hamouchene, 2016; Jenss & Schuetze, 2024; Rignall, 2012; Ryser, 2019a, 2019b; Salime, 2021). We build on and complement these perspectives by putting greater emphasis on the national political economy of solar energy expansion. Renewables create tradeoffs at the global, national, and local levels, but it is through a national lens that most policy-makers in the Global South adjudicate them. Our contribution therefore is to specify this national-scale political economy – in particular the interplay between incumbent institutional interests and states' strategic engagement with foreign capital – which better explains why lower

and middle-income countries may reject, at least at initial stages, decentralized alternatives in favour of centralized ones. In doing so, we take up the multiscalar agenda set by Cantoni and Rignall (2019) and supply the national scale that sits between the global political economy and the local impacts existing accounts foreground (Aoui et al., 2020; Ryser, 2019a, 2019b; Salime, 2021).

More specifically, we put forward two main arguments. First, Morocco's rejection of decentralized solar power is not primarily a consequence of a principled rejection rooted in historical legacies or the authoritarian mode of governance of the Moroccan state but can be attributed to the political economy of electricity production and internal struggles within a Moroccan state that holds no unified and coordinated position on the subject. Incumbent producers and distributors, whose interests are defended by, amongst others, the powerful Ministry of Interior, saw citizens' and businesses' self-production initially championed by less powerful Moroccan ministries as a threat to their business model. Second, Morocco's initial preference for renewable megaprojects is born out of a conjunction of prioritizing the security of power supply and the appealing returns of strategic 'extraversion' (Bayart, 1989), of mobilizing foreign resources in support of domestic political objectives. For various reasons, the returns of this extraversion were ultimately more geopolitical than developmental, and above all quite fragile in the long run. Of course, our emphasis on the financial interests of various actors should not be construed as apolitical or ignorant of the role of authoritarianism. At its heart, Morocco's energy strategy is one that prioritizes control and predictability for the twin objectives of preventing regime-threatening public discontent and supporting economic competitiveness. However, we argue that both in the Global South and in fact in the Global North, among autocracies and democracies alike, governments set similar priorities based on trade-offs adjudicated at the national level.

This paper proceeds as follows. We first review the literature on the domestic and geopolitical factors that shape large-scale renewables investments, drawing together relevant insights related to project de/centralization, regime type, energy transitions, and international development strategies. We then present our data and methods, before turning to the case of Morocco's solar strategy and the Noor Ouarzazate complex, where we find that the long non-implementation of decentralized solar reflected incumbent institutional interests in a fragmented state without a coordinating pilot, while centralized megaprojects were sustained by the financial and geopolitical returns of strategic extraversion. Finally, we highlight how our findings may inform conceptual and empirical discussions on the politics of renewable energy projects in LMICs more broadly.

2. The political economy of large-scale renewables: a literature review

An ever-growing multidisciplinary literature has considered the political, social, and economic dimensions of large-scale renewable energy megaprojects in LMICs. The policy trade-off between such large-scale projects and smaller, decentralized, and modular solutions matters in key ways that we take up in turn. A discussion of how scholars have explained choices among different possible strategies of renewable expansion follows, after which we specify the contribution we seek to make.

There is a large body of literature suggesting that top-down megaproject frameworks are less successful and more conflict-prone than bottom-up approaches. Such projects often occur in authoritarian settings with limited stakeholder engagement and can 'exacerbate the technological risks of energy megaprojects' (Huda, 2022, p. 10). In weak governance contexts they have been linked to heightened social unrest and violence (Cavanagh, 2018; Cavanagh & Benjaminsen, 2017). More broadly, such situations have been described as 'unjust energy transitions', wherein

the costs of renewable energy projects – such as land grabbing and displacement around large solar, wind, and hydro projects – are imposed on marginalized groups while benefits accrue elsewhere (Cavanagh, 2017; Ghosh et al., 2023; Maslen, 2023; Sareen & Shokrgozar, 2026; Stock & Birkenholtz, 2021). In addition, ‘solar megaprojects can perpetuate political patronage favouring actors with already established connections to ensure the continuity of the political regime’ (Sorman & Stock, 2024, p. 4).

Smaller-scale, distributed energy systems, on the other hand, are often seen as politically virtuous. Broadly, decentralized renewables such as community solar installations, mini-grids, and household systems align with democratic values by empowering local stakeholders and diversifying ownership of energy resources. Modular and locally embedded, these solutions reduce ‘centralised control by political and economic elites’ (Vakulchuk et al., 2020, p. 6) and foster improved energy security through more distributed, resilient energy systems (Rathore et al., 2019). In fragile, conflict, or post-conflict settings, decentralization may reduce tensions by spreading benefits more evenly (Lentschig et al., 2024; World Bank, 2022). Proponents of so-called ‘energy democracy’ see green transitions as ‘opportunities for advancing renewable energy and democracy together’ (Burke & Stephens, 2018, p. 80). However, this requires considerable institutional and regulatory capacities that are more difficult to find in LMICs (Okorieimoh & Ehimen, 2026).

More recently, scholars have begun to nuance these findings. For example, top-down approaches can support just transitions and effective reform if they consult populations and provide benefits (Lo, 2021) and avoid the ‘short-termism and political capture of utilities’ that sometimes accompanies electoral competition (Chatterjee, 2018, p. 138). Moreover, decentralized renewable energy frameworks are not unproblematic, as they can face challenges related to scaling and cost (Xu & Gallagher, 2022), as well as disrupt existing socio-economic structures and public service commitments (Gabriele, 2004). Similarly, although larger projects may face greater local resistance they may be more cost-effective and serve larger segments of the population (Lamhamedi & de Vries, 2024). The pluralistic decision-making and societal consultations characteristic of democracies can slow implementation but may ultimately yield greater acceptance (Uzar & Eyuboglu, 2024). By contrast, authoritarian regimes’ core advantage typically lies in their ability to mobilize resources quickly through top-down project imposition. When this has been harnessed to serve ‘green’ objectives, this has been termed ‘authoritarian environmentalism’, defined as a ‘public policy model that concentrates authority in a few executive agencies manned by capable and uncorrupt elites seeking to improve environmental outcomes’ (Gilley, 2012, p. 288). That said, it is not clear that centralized systems are inherently politically less or more ‘beneficial’. Understanding the impact of (de-)centralized energy policies will necessarily depend on how and where costs and benefits are evaluated (e.g. at the global, national, or local level). Energy social science, the political ecology of the MENA region, and the critical political economy of green finance increasingly recognize that the distributed renewables’ promise of democracy and energy justice often fails to materialize (Avila-Calero, 2025; Baker et al., 2021; Cantoni & Rignall, 2019; Rignall, 2016). It thus remains an open question how various energy approaches and their combinations – top-down or bottom-up, centralized or decentralized – are linked to the ‘right’ mix of political, security, environmental, and utility benefits for LMICs.

In drawing parallels to the oil and mineral sectors, scholars have also considered whether a ‘green resource curse’ emerges from large-scale renewable energy development. The classic resource curse claims that resource-rich countries are more likely to experience corruption, conflict, authoritarianism, and underdevelopment (Ross, 2015). Initially, renewables appeared immune as they cannot be exhausted and are ‘diffuse’, in other words harder to claim and monopolize

(Eisgruber, 2013). Yet poor governance can nullify these advantages. Large-scale renewable energy projects can foster conflict while generating little in the way of sustainable, resilient development, mirroring rentier state effects observed in petro-states (Brunet et al., 2022; Vakulchuk et al., 2020; Vinke et al., 2023), in particular in weak institutional and regulatory contexts (Leonard et al., 2022). Some also criticize existing ways of expanding solar energy as ‘dynamics that reinforce – rather than challenge – structural inequalities and processes of socio-environmental degradation globally’ (Avila-Calero, 2025, p. 1542). Thus, without transparency, strong institutions, and community engagement, renewable projects can trigger similar governance challenges to those in extractives. Growing recognition of this risk has led to calls to adopt various mechanisms to prevent a green resource curse (Extractive Industries Transparency Initiative, 2022; Stein et al., 2023).

Given these implications, understanding why governments opt for different renewable expansion strategies is crucial. Although governments often point to technical-financial advantages, in particular economies of scale, we know that the trade-offs involved are also political, legal, social, and environmental (Sovacool & Bulan, 2011).

One strand of the literature emphasizes the role of historical legacies and path dependence. In much of the Global South, state-led, centralized energy planning is common. After independence, many post-colonial states kept or established national electric utilities as public monopolies, emulating what was then also the dominant state of affairs in the Global North. Almost everywhere then, energy infrastructure expansion typically meant large, top-down projects led by the central state (Lockwood et al., 2017). Building genuinely decentralized, participatory energy systems, on the other hand, requires substantial institutional capacity and regulatory reform – conditions more common in democracies than in authoritarian or clientelist states (Okorieimoh & Ehimen, 2026). Furthermore, with decision-making concentrated in one or a few agencies or state-owned enterprises, the skepticism ‘of the promotion of decentralised self-organised solar electrification systems’ reflects this historical ‘path dependence’ (Boamah, 2020, p. 2; Newell, 2021; Sovacool, 2016).

Closely related, another strand of the literature highlighted the political, systemic roots of centralized energy expansion. Authoritarian regimes are said to favour hierarchical, top-down management of the power sector as it aligns with a control-based governance style, lets governments showcase achievements and assert authority, whereas decentralized solutions might empower independent actors (Gilley, 2012; Hancock & Sovacool, 2018; Huda, 2022; Rignall, 2016). Scholarship further showed how autocracies in practice often blend authoritarian governance with consultation, participation, and co-optation (Gilley, 2012; Lo, 2021).

Yet another strand has focused on the global and international dimensions of energy transitions, specifically geopolitics and international finance. Large renewable energy projects can also act as showpieces that serve a geopolitical agenda. Beyond economic benefits, states use them to project leadership, forge new partnerships, and enhance global standing (O’Sullivan et al., 2017; Scholten et al., 2020). Renewable energy diplomacy allows countries to leverage flagship projects to signal commitment to climate goals and increase legitimacy abroad (Nicolai, 2022, 2026; O’Sullivan et al., 2017). But foreign aid and investment for renewables in developing regions are often tied to political allegiance or market access, making these projects tools of statecraft (Zumbraegel & Sons, 2024). Donors and international financial institutions, for their part, have plausible reasons to prefer large, centralized projects, whose visibility and economies of scale ease both financing and attribution. Critics describe the result as ‘green structural adjustment’ (Bigger & Webber, 2021) or a ‘Wall Street Consensus’ that ‘de-risks development asset classes for global institutional investors’

(Gabor, 2021, p. 432). In large, transnational grid interconnection and power generation megaprojects which aim to facilitate electricity exports to neighbouring countries and regions, these globalized political and financial dynamics often intersect, as countries vie for legitimacy, influence, and resources (Abu-Zreig & Hussein, 2026; Jenss & Schuetze, 2024; Schuetze, 2024a; Schuetze & Hussein, 2023). Scholars argue that such pursuits, while encouraging more sustainable energy generation, can often be detrimental for inclusive development and democracy. They grant leverage and confer legitimacy to authoritarian regimes, hinder opportunities for democratic contestation, and capture resources that could have achieved broader social impact if distributed among community-based projects, capacity building, or grid upgrades (Jenss & Schuetze, 2024; Schuetze, 2024a; Schuetze, 2024b; Schuetze & Hussein, 2023). Such cross-border renewable interconnections can therefore entrench export dependence and reproduce uneven, even colonial, relations rather than deliver shared gains.

The literature therefore acknowledges multiple causes and emphasizes the importance of context (Boamah, 2020; Sovacool & Bulan, 2011). Often, however, these multiple causes are advanced with little indication of which matter most, how they interact, or how decision-makers actually weigh the trade-offs among them. Perhaps a broader issue is that since countries with authoritarian histories continue to pursue centralized strategies while democracies appear to enable more distributed forms of energy expansion (Uzar & Eyuboglu, 2024), scholars have treated centralization as the puzzle to be explained. But centralized, state-led electricity provision is the ‘default’ across much of the Global South. Rather than asking why states opt for centralized renewable transitions, it may be more instructive to ask why decentralized solutions – technologically feasible and, as in Morocco, formally enacted in law – are not more actively pursued: in other words, to explain the status quo bias.

How, then, do LMICs adjudicate trade-offs of centralized vs. distributed renewable energy expansion given constraints at different levels (global, national, local)? We contend that centralized solar in LMICs is best understood as the product of a multi-scalar political economy, in which national development and security strategy, geopolitical positioning, donor and foreign-capital preferences, incumbent utility interests, and technical constraints interact to shape the choice for or against centralization (Newell, 2021; Newell & Mulvaney, 2013; Schuetze & Hussein, 2023). Our contribution is to specify this political economy and to show which interests blocked the decentralized path, what strategic returns sustained the centralized one, and what the implications are for LMICs more broadly. Figure 1 sets out this framework and marks off what the literature already establishes from what our case adds.

3. Data and methods

This article builds its argument from three streams of evidence. The first stream is documentary: the successive laws on decentralized generation (13-09, 38-16, 48-15, 82-21, and 40-19), a 2020 report of the Conseil Économique, Social et Environnemental, and the project and finance records of the multilateral and bilateral donors that funded Noor. The second is a critical assessment of the Moroccan press, which we use, among other things, to follow public debate over CSP, the auto-production rules, and MASEN’s finances as they unfolded. The third is a set of background interviews ($n = 10$), conducted between February 2025 and July 2026 with Moroccan officials in the energy field, development bankers from organizations involved in the financing of Moroccan energy projects, employees of donor agencies involved in advising the Moroccan government, foreign diplomats, and independent energy sector experts.

Theme	Established in the literature	What the Moroccan case adds
Energy democracy and justice	While not inherently democratic or just, decentralization more beneficial	Developmental and political trade-offs over prices, energy security weighed differently at national level
Green resource curse	Large renewables can reproduce dispossession, rent-seeking, and rentier dynamics	Negative effects at local level but real national-level returns do not suggest broader curse
Role of regime type and historical legacies	Institutional path dependence, colonial legacies of centralism, and authoritarianism favour megaprojects	Political economy of power market, with incumbents using own and intra-state relays to defend financial interests; no everyday coordinator to adjudicate struggles
Foreign capital and geopolitics	Donors and IFIs push for bankable projects; megaprojects serve as geopolitical showpieces	Morocco's extraversion mobilized donor eagerness for its own objectives, but rents are fragile; greater soft power a byproduct
Puzzle framing	Asks why countries in Global South choose centralized megaprojects	Centralized provision the default, why is decentralized unimplemented even when legal frameworks developed

Figure 1. Established insights and the contribution of the Moroccan case.

Interviewees were selected purposively for their proximity to, or close knowledge of, solar policy decisions. Questions were tailored to each participant's professional position and further updated in an iterative manner with what was learned from each interview, with the ultimate goal of reaching saturation (Small, 2009). The questions mainly focused on reasons for government (in)action on (de)centralization, project financing and the economics of the power market, and the relationship and interactions between Moroccan stakeholders as well as between Moroccan and international stakeholders. Interviewees spoke on a non-attributable basis, which is why we paraphrase rather than quote at length and where necessary we withheld dates or titles to protect anonymity. The material was analysed thematically, identifying both overlapping and divergent explanations officials and documents give for our observations. Triangulating interviews against documents and press reporting guarded us against taking any single actor's account at face value.

We write as sympathetic to the justice claims raised around large solar projects, and skeptical of many existing boosterish readings of Noor and Morocco's renewable energy strategy more broadly. This positioning shaped the questions we asked, which intended to challenge official narratives, and we have tried throughout to hold it to the evidence.

4. Noor Ouarzazate and Morocco's renewable energy transition

Morocco, home to around 37 million people, is a constitutional monarchy under King Mohammed VI, whose reign since 1999 has been marked by relative political stability and a strategic push for economic modernization. A key aspect of this has been a focus on renewable energy, yet the Kingdom's ambitions unfold amid complex geopolitical dynamics, including its contested claims over

the Western Sahara, which influence its national development strategies, diplomatic relations and international partnerships.

Regarded as a LMIC leader in the transition to renewable energies, Morocco's policy shift started with the adoption of the New National Energy Strategy in March 2009, the Moroccan Solar Plan in November 2009, and the Integrated Moroccan Programme of Wind Energy in June 2010. Moroccan officials described the price spike of 2008 as a 'wake up call' for a country that was close to 98% dependent on foreign fossil fuel for its energy needs,² all while per capita energy consumption nearly doubled between 2002–2012 (Steinbacher, 2015). The original impetus for Morocco's renewable strategy was therefore the perceived threat to energy, and even national security, rather than concerns about sustainability (Nfaoui & Sayigh, 2020; Rignall, 2016; Sabry, 2025),³ which is not unlike what we know from other Global South cases (Schuetze & Hussein, 2023).

In 2025, Prime Minister Aziz Akhannouch announced that by 2030 Morocco would reach its target of hitting 52% of renewable energies in the national electricity mix, four years ahead of schedule.⁴ Morocco's renewable plans were also announced around the same time as the DESERTEC consortium was founded, which envisioned North African countries producing and exporting clean power to Europe.⁵ Although feasibility concerns, the Arab Uprisings, and falling oil prices derailed DESERTEC's ambitious plans, Morocco was able to offer international investors a credible, pragmatic, ambitious alternative (Cantoni & Rignall, 2019; Rignall, 2016).

Central to Morocco's renewables ambitions has been the 582 MW Noor Ouarzazate complex, a set of three concentrated solar power (CSP) and one photovoltaic (PV) plants built between 2013–2018. Commissioned and 25% owned by the state-owned Moroccan Agency for Sustainable Energy (MASEN),⁶ it is the world's largest CSP plant and has received billions of dollars of concessional finance from an array of multilateral and bilateral donors (African Development Bank, 2019). Although much of Morocco's progress on renewables has actually come from wind and hydro energy, it is mainly solar megaprojects – and particularly the Noor Ouarzazate complex – that have been celebrated as part of the country's green energy transition.

That said, the choice between CSP and PV involves technological and financial tradeoffs. PV converts sunlight directly into electricity, but requires batteries for storage and use after sunset. CSP concentrates solar heat to drive turbines and can bank that heat in molten salt to continue to power the turbines after sunset. Globally, CSP has been a niche: a few gigawatts concentrated in Spain, the United States, and a handful of MENA and Chinese sites, against more than a terawatt of installed PV. Noor Ouarzazate is the largest CSP complex in the world, which is part of what made it a showpiece.

As a result, Noor Ouarzazate garnered widespread attention among international academics, practitioners, and policymakers, challenging assumptions about the (in)ability of developing countries to effectively build large-scale energy infrastructure (Haines et al., 2023). Many have highlighted Morocco's ambition to geopolitically capitalize by positioning the country as a leader of the 'green transition' both in Africa and globally (Cantoni & Rignall, 2019; Haddad et al., 2022; Hamouchene, 2016; Nfaoui & Sayigh, 2020; Ryser, 2019b). Indeed, Morocco's solar power expansion has been characterized by a preference for megaprojects, mobilizing private capital and concessional donor financing under centralized state control (Cantoni & Rignall, 2019; Günay et al., 2018; Haddad et al., 2022; Okpanachi et al., 2022; Steinbacher, 2015). Noor plants were built in a top-down fashion by a state entity (MASEN) defining areas suitable for solar energy production. Tender processes were organized whereby developers able to fulfil certain criteria could bid for the lowest cost at which they were willing to sell generated electricity.⁷ Such an approach contrasts with visions of more decentralized 'energy democracy' (Becker & Naumann, 2017; Burke & Stephens,

2018; Haines et al., 2023), with some contending that Moroccan strategies have prioritized ‘green grabbing’ at the expense of local communities while benefiting the country’s monarchy and international investors (Aoui et al., 2020; Cantoni & Rignall, 2019; Hamouchene, 2016; Rignall, 2012, 2016; Ryser, 2019b, 2019a; Salime, 2021).

However, Morocco has not had an *official* position against decentralized solar energy production. Between 2010 and 2023, the Moroccan parliament passed several laws (laws 13-09, 38-16, 48-15, 82-21, and 40-19) that are designed to enable this.⁸ Furthermore, external lobbying in favour of decentralization, mainly from Germany’s development agency GIZ, kept the topic on the agenda (Steinbacher, 2015). Nevertheless, successive Moroccan governments have delayed publishing key implementation decrees and enabling administrative and institutional measures required to implement the new regulatory framework. It is therefore clear that Morocco has long maintained an *unofficial* preference in favour of solar megaprojects and against decentralized energy production. Yet this is puzzling considering some of Noor’s challenges. Rapidly decreasing costs of PV raised questions as to whether Morocco had chosen the ‘right’ solar technology, and production at Noor Ouarzazate had to be halted for costly repairs. A 2020 report on the state of Morocco’s energy transition highlighted MASEN’s ballooning deficits and recommended greater emphasis on decentralized electricity production (Conseil Economique Social et Environnemental, 2020).⁹ In March 2021, MASEN’s head, Mustapha Bakkoury, was relieved from his duty and replaced three years later by Tarik Moufaddal.

Why did Morocco in practice maintain its preference for megaprojects despite both rhetorical and legal commitments to decentralized electricity production? Some consider the country’s long history of political and administrative centralization, both as a French colonial legacy, and/or as a projection of the political power of the Moroccan monarchy to marginalized and contested territories to have played a role (Cantoni & Rignall, 2019; Steinbacher, 2015).¹⁰ Opting for large-scale centralized production indeed offered the opportunity to channel investment to these historically marginalized parts of the country which were particularly suitable for renewables due to strong winds and/or intense sunshine. Furthermore, as Nicolai (2026, p. 224) explains, Morocco’s resource-stricken ‘regions have neither the financial capacities nor the political authority to invest independently in renewable energy production, choose sites, or construct solar or wind farms’ That the Moroccan leadership’s first instincts were to have the central state take the lead on the renewable energy transition,¹¹ should therefore not come as a surprise.

Research has also pointed to foreign influence in advocating for larger CSP projects, for which Western countries had an edge over China who dominated PV panel production (Cantoni & Rignall, 2019; Leonard et al., 2024; Steinbacher, 2015). More generally, the development and critical IPE literatures have highlighted the role of globalized finance, institutional investors, donors and development banks in instituting a ‘Wall Street Consensus’ that pushes states in the Global South to facilitate investment in infrastructure projects (incl. renewables) (Gabor, 2021; Gabor & Sylla, 2023). State-backed megaprojects in recipient countries like Noor offer high visibility and administrative economies of scale by enabling foreign capital to invest in one or a few large projects instead of many small or medium projects.

The prioritization of solar megaprojects both facilitated Morocco’s access to concessional finance and offered opportunities to strengthen its geopolitical position. Morocco’s main geopolitical objective is the recognition of its sovereignty over the Western Sahara. Both Europe and Africa are instrumental in this regard. Europe due to its global power and because it hosts several permanent members of the UN Security Council. And Africa because it is the continent where the largest share of countries still recognize the Sahrawi Arab Democratic Republic (SADR) that also claims

sovereignty over the territory. Morocco withdrew from the African Union in 1984 in protest of the organization's recognition of the SADR but decided to rejoin in 2017, opting for a new approach. Since then, Morocco has achieved formal recognition of its sovereignty over the Western Sahara from the United States as well as de facto recognition from important European countries like France. Several African countries have withdrawn their recognition of the SADR and support for Morocco's 2007 'autonomy plan' has steadily grown, until it was endorsed by the UN Security Council on 31 October 2025 as the basis for negotiations over a final settlement.

Accordingly, Noor Ouarzazate and Morocco's renewable megaprojects were not merely sources of renewable energy production, but technical and infrastructural showpieces that served to build and strengthen the country's soft power (Cantoni & Rignall, 2019; Günay et al., 2018; Haddad et al., 2022; Haines et al., 2023; Nicolai, 2022, 2026). Morocco has been described as successful in increasing its standing with European and Sub-Saharan African governments (Nicolai, 2022, 2026). Europe is Morocco's main export market, and due to its numerous infrastructure projects and as a gateway to African markets, an attractive investment destination for European firms. European governments are also dependent on Morocco for security cooperation and managing migration (Kutz & Wolff, 2022), and African countries look to Morocco for foreign direct investment and technical assistance. There is evidence that this strategy is paying off. Morocco was allowed to host COP22 in Marrakesh in 2016, a few months after inaugurating Noor Ouarzazate, and seized the opportunity to take delegates on a tour of the new complex. Western diplomats also regularly highlight Morocco's leadership within Africa, the MENA region, and the wider Global South on this issue.¹² The 'green' soft power derived from its position as a global renewables pioneer hailing from the Global South therefore complements and strengthens Morocco's already considerable diplomatic leverage it has cultivated in recent decades.

These perspectives emphasize that a coalition of domestic political elites, international capital, and the donor-expert community coordinate in assembling megaprojects that help Morocco maintain control over its domestic energy sector, assert power across marginalized and contested parts of the country, and curry favour with foreign nations that align with their broader geopolitical objectives. As a result, decentralized energy production that would promote 'energy democracy' appears incompatible with the *modus operandi* of the Moroccan state. Although providing important pieces to the overall explanatory puzzle, such analyses may run the risk of retroactively attributing too much strategic foresight. In actuality, the country's renewable energy policy avoiding decentralization seems much more rooted in the political economy of the electricity market, as well as technical and capacity constraints of the time.

Morocco's system of grid operation, production and distribution, in the late 2000s and early 2010s was neither ready for a potentially massive increase in electricity injections by small and medium-sized energy producers across the country, nor for the complex technical, financial, and administrative management this would require. The national utility ONEE (Morocco's grid operator, sole legal buyer, and at the time sole legal producer of electricity), was particularly worried about the amount of electricity large numbers of producers would inject and the potential instability solar energy's intermittent production could cause.¹³ The centralized Noor complexes and other large plants were, despite their huge size and cost, more straightforward technical and administrative solutions. The technological choice was also a consequence of ONEE's request for Noor's electricity production to continue in the peak hours after sunset. At the time, PV and battery solutions were still inadequate and expensive, and large CSP plants could be more easily integrated with the grid (Cantoni & Rignall, 2019; Rignall, 2016). Given ONEE's demand, CSP was at the time of decision-making simply the cheaper option.¹⁴ This would of course begin to change within only

a few years, following China's massive production expansion of both solar panels and batteries, eventually making PV and battery solutions the more affordable option. And as CSP's business case becomes more compelling with scale, Noor's massive scale also became more sensible. The emphasis on grid stability and supply security was, according to a bilateral donor employee, an understandable political priority given that power cuts were a source of civil unrest electricity, for example in Senegal under Macky Sall.¹⁵

The potential financial implications of decentralization were even more worrisome (Steinbacher, 2015). ONEE, large private producers as well as private and municipal production and distribution companies all feared significant economic losses should Moroccan citizens and businesses producing and consuming their own electricity and inject excess production into the grid.¹⁶ The opening up of the grid to high voltage renewable energy production from private actors is said to have caused a drop of 30–40% of ONEE's sales, widening its structural losses that make the de facto subsidization of electricity in Morocco apparent.¹⁷ ONEE also feared that an obligation to pay for small producers' injections would add to its already existing legal obligations under power purchase agreements signed with private producers to buy all electricity by these plants produce, no matter the real need.

The Ministry of Interior, a more powerful ministry than the Ministry of Energy, is officially responsible for the network of power distributors, some of which are operated by foreign companies under concessions (e.g. in Rabat or Casablanca), some of which are municipally owned, and is also said to be a key source for the longstanding blockages of allowing self-production of solar energy.¹⁸ The Ministry is said to envision a cross-subsidized business model for the new *Sociétés Régionales Multiservices* (SRM) that are supposed to replace them and act as decentralized utilities providing water, electricity, and sanitation. Without controlling the more profitable sale of electricity, it fears these SRMs will not be viable.¹⁹

In addition, a Moroccan World Bank official blamed the tensions between MASEN, ONEE, and various ministries (above all Finance, Energy, and Interior), on the one hand, on the inability of the Ministry of Energy, which formally has a 'tutelle' over both MASEN and ONEE, to actually control these entities, calling them both more powerful than the Ministry in charge of them, and on the other hand that in everyday governance there is no institutional 'pilot' adjudicating and coordinating between the various actors.²⁰ Aoui et al. (2020) write that in 2015 the King asked the institutional actors responsible for the energy strategy to account for their failure to coordinate, and that they answered by raising the renewables target, presumably because they cannot resolve the coordination problems. The Ministry of Energy has struggled to overcome the blockades put up by the Ministry of Interior and ONEE. In 2023, they tried to simply go ahead and publish a campaign announcing the possibility for self-production and even the sale of excess production, but without affecting any real change.²¹ The Ministry of Industry has also been pressing for progress given that new EU carbon border taxes require Moroccan industries to demonstrate the 'greening' of their production processes. Former influential Minister of Industry, Moulay Hafid Elalamy, confirmed these intra-state tensions in the summer of 2021: 'It has been two years that I have been fighting to move forward on this issue [of the missing implementation decrees] but I still have not managed to achieve anything'.²² The lack of progress in the expansion of decentralized solar energy production appears therefore to be rooted above all in the political economy of the power market and the different interests, responsibilities, and power of various, mainly public actors, who have found themselves in opposing camps. It is therefore not clear that the Moroccan state or regime holds by virtue of its nature, history, or political preferences a fundamental objection to decentralized electricity production.

In June 2026, the long-delayed implementation decrees for previous laws relating to decentralized production and self-production were eventually published.²³ While small and medium citizens and businesses can now also legally produce their own solar electricity, they are limited to injecting 20% of the surplus electricity.²⁴ Furthermore, the injections of the ‘free market’ are restricted to regional quotas that depend on grid capability and electricity demand, and the financial interests of incumbents.²⁵ The Ministry of Interior appears to have lifted its blockade following these and other restrictions, like ensuring that SRMs have a right of purchase to the injected electricity, which is remunerated at a fairly low rate, and to sell it on at a profit.²⁶ Despite the publication of the decrees, it is at the time of writing still unclear to what extent significant small and medium scale solar production will really be authorized or tolerated in practice, given the quotas and restrictions and given the many levers authorities still have to deny the legal installation of solar panels, even under the most basic declaratory regime for very small units (under 11kw).²⁷

5. Discussion: the Moroccan experience and its implications for Global South LMICs

Noor Ouarzazate has been widely interpreted as a manifestation of a top-down, centralized, and extractive energy transition that defies the liberal-democratic ideal of ‘energy democracy’ (Cantoni & Rignall, 2019; Rignall, 2016; Sabry, 2025). Yet a closer reading of the Moroccan case nuances this narrative and calls for revisiting the relationship between regime type, energy transitions, and development strategies. In this section we return to key debates reviewed in Section 2, namely on the determinants, merits, and implications of different renewable expansion strategies, the prospects of a green resource curse, and the role of geopolitics and foreign capital highlighting ways in which the Moroccan case may expand and/or challenge existing understandings the political economy of energy transitions amongst LMICs.

We begin with the determinants of expansion strategies. That in the Moroccan case incumbent interests were at stake is not entirely new. Steinbacher (2015) records the revenue concerns of the distributors as one of several reasons behind the refusal of feed-in tariffs, in an account concerned with policy transfer rather than with the fate of decentralized generation. Cantoni and Rignall (2019) note that small-scale generation would have reduced the income of electricity companies, though the observation sits beneath an explanation weighted towards political centralism. Our evidence places these interests at the centre. The political economy of who stood to lose from reform, the strategic extraversion that mobilized concessional finance, and the technological and financial trade-offs of the period were more decisive than centralist tradition or authoritarian modes of governance. While these top-down, centralized solutions are indeed authoritarian, they also reflect and engage with legitimate concerns shared by democratic countries. Namely regarding controlling energy prices to support poorer segments of the population and domestic industries, strengthening energy security, and developing marginalized parts of their territories.²⁸ Analyses that implicitly or explicitly endorse the normative assumptions of ‘energy democracy’ regarding the merits of decentralization – particularly while these are empirically still uncertain (Braunstein et al., 2023) – may fail to understand why and how some authoritarian states successfully oversee renewable energy transitions, while other countries, including democratic ones, struggle to do so (Haines et al., 2023). More generally, they may fail to recognize comparable political economy dynamics across regime types, regions, and levels of development, both in the Global North and the Global South.

Furthermore, Morocco is often portrayed as a classic case of an authoritarian regime able to deliver infrastructure development in way that is exclusionary and bypasses local communities (Cantoni & Rignall, 2019; Hamouchene, 2016). Other examples exist, in India for example, where utility-

scale solar has driven documented dispossession of agro-pastoral land under a green banner (Stock & Birkenholtz, 2021, 2025). And scholars have indeed warned that Morocco's next 'green' project, the production and export of 'green hydrogen' to Europe could have similar outcomes (Hussein & Schuetze, 2024). Such logics are without a doubt at play, and more research uncovering them would be welcome. However, it is only one part of the picture. Haddad et al. (2022) argue that Noor-style megaprojects also present opportunities for otherwise marginalized communities to enter into more direct dialogue and voice socio-economic demands. Günay et al. (2018) and Hanger et al. (2016), both found that the Noor Ouarzazate project was widely accepted in the local community.²⁹ And even much of the literature critical of Noor acknowledges that local communities objected mainly to the handling of consultation processes, the sale of the land, and the financing of development projects, not the principle of building a large solar power plant in a region that historically has received little public investment (Aoui et al., 2020; Cantoni & Rignall, 2019; Hamouchene, 2016). The Moroccan case therefore seems rather to support the claim that it is possible for top-down megaproject implementation of green energy investments to build broad-based domestic support (Lo, 2021). This is especially the case when we shift the level at which we evaluate benefits of projects from the local to the national – more in line with how governments and wider populations evaluate them – without denying the local costs those choices often impose.

Critical perspectives often rest on an implicit or explicit adherence to conceptions of 'energy democracy' and assumptions about what constitutes a just energy transition that adjudicate between the local vs. the national. Much of the literature operates with the implicit normative assumption that the right level at which trade-offs for (renewable) energy projects should be adjudicated is in the immediate vicinity of the project (Aoui et al., 2020). Yet this raises, amongst other things, the question how 'outsiders' are defined. While Ouarzazate, like many other regions, towns, and villages, is home to distinctive communities, it is also part of a wider national polity in which the transition to green energies is presented as a national effort. In this light, should the trade-offs of major renewable projects be adjudicated primarily at the local level, or at the national levels, where they might be weighed against national benefits of meeting climate commitments, bolstering energy security, or achieving major geopolitical aims? When trade-offs are made with the *national* (as opposed to local or global) benefit in mind, centralized, top-down renewable energy projects, may increase the potential to offer accelerated socioeconomic development.

Consequently, the presence of a green resource curse in the Noor case is rather weak if one interprets 'resource curse' as an outcome where natural resources create negative economic and political impacts (or prevent positive ones) *for the country as a whole*. While Noor has produced both negative and positive effects locally, its national returns have been real but uneven. It grew the supply of electricity, reducing reliance on fossil fuel imports that drain foreign currency reserves, and ended up generating significant geopolitical benefits (Nicolai, 2022). Even at the local level, it is not clear whether renewable projects are more problematic (in terms of rent seeking, corruption, land acquisition practices, etc.) than other types of infrastructure investments (Aboda et al., 2019). However, it is also clear that the project underperformed in terms of its productivity and in doing so contributed to leaving MASEN weakened financially. Noor illustrates that 'unprofitable' and 'successful' are not opposites. A megaproject can underperform financially but still deliver on other priorities such as energy security, industrial signalling, and diplomatic capital, all benefits that accrue at the national scale and rarely matter for project-level evaluation.

Our case further reiterates the geopolitical relevance of renewables. Projects can be instruments to garner and project power and craft defined national images and narratives on the world stage. However, in the Moroccan case, this seems to have happened as a fortunate byproduct of successful

project completion, one that in retrospect softened the blow of having bet on the ‘wrong’ technology, rather than as the main goal at the outset of the project design. Indeed, our interviewees did not confirm geopolitical calculation as a major consideration at the planning stage, emphasizing instead the more immediate goals of building a functioning power plant and kickstarting a domestic solar sector.³⁰ There is no doubt that project funders and designers are aware of the scale of their projects, but at that stage there is typically also considerable uncertainty as to whether the project will be completed on time and within cost limits, which complicates the *ex ante* budgeting of geopolitical payoffs. This can be seen with the ongoing Noor Midelt project, a multi-phase set of hybrid (PV and CSP) solar installations which has accumulated delays and problems³¹ and hardly serves as source of international pride.³²

The case of Noor may also challenge common narratives about the role of globalized capital and the influence of IFIs on policy-making. Energy transitions are costly, and Morocco’s approach that attracts (and maximizes) considerable investment through grants and concessional finance from multilateral and bilateral donors can also be read as a form of strategic ‘extraversion’ (Bayart, 1989).³³ From this point of view Morocco capitalized on international donors’ eagerness to fund project that fight climate change and support economic development in the post-Arab Spring Middle East and North Africa to secure concessional financing.³⁴ Funds that were then used to develop renewable energy projects serving the interest of the Moroccan state and regime, which would otherwise have needed to be financed through higher interest public debt. Crucially, however, the rents of such extraversion can dry up. Recognizing Morocco’s agency in pursuing such a strategy therefore does not mean it is necessarily a successful one, only that it is at the outset a rational one.

Ultimately, the Moroccan case yields three findings that travel beyond it. First, the aversion towards decentralization is best explained by a desire to retain political control over the production and sale of electricity as well as by the clashing financial interests of incumbents and reformers, each with their own institutional relays, which, in the absence of a politically powerful day-to-day coordinator, inevitably produces blockages. Second, foreign capital did not dictate Morocco’s path. Morocco sought concessional finance for objectives of its own and found donors eager to provide it. There is no doubt that megaprojects and donor preferences suited one another but this alignment is better read as capitalized on by Morocco than imposed upon it, even if the rents of such extraversion proved fragile. Third, the level at which one evaluates megaprojects or large solar plants matters. Development strategies reflect national-level goals. Evaluated locally, Noor can look extractive whereas evaluated nationally, it delivered real but fragile and uneven returns.

6. Conclusion

This article has shown that Morocco’s slow progress on decentralized solar energy production reflected incumbent producer and distributor interests, intra-state struggles unresolved by a lack of a coordination and adjudication, and geopolitical returns on the status quo, rather than authoritarian pre-disposition. Centralized, state-led, top-down megaprojects can be a part of a broadly successful renewable energy expansion, but understanding for whom, how and at what level these are beneficial reaches beyond financial or security perspectives alone. While often framed as a tradeoff between local (community stakeholders) and global (climate commons) interests, here we have also emphasized the relevance and importance of national-level dynamics. Authoritarian regimes can often execute large projects that may prioritize macro-level development (infrastructure, GDP growth) and international legitimacy over local interests or human development

(community empowerment, equitable wealth distribution). We encourage theoretical work that examines these trade-offs systematically. The notion of ‘authoritarian environmentalism’ could be expanded to consider whether citizens materially benefit from such renewable transitions, or is it primarily the regime? As such, while local-level impacts and socio-spatial asymmetries demand careful attention to ensure just energy transitions, what may resemble a ‘green resource curse’ might, in fact, be offset by broader national-level strategic advantages related to local development, energy security and increased international standing. A cursory glance at developed countries, past and present, shows that this is, in fact, not unusual. Recognizing and understanding this complexity is therefore important in crafting more just and effective renewable energy policy and pathways to global sustainability.

Our findings also speak to the global political economy of green transitions. Instead of seeing the Moroccan path as a result of the pressures of international investors, development banks, and bilateral donors, one could also read it as a strategy of extraversion that mobilized resources it did not have for the gain of state and regime. Renewable energy projects and transitions therefore are geopolitical instruments, but perhaps not solely or even chiefly through their ‘showpiece’ or soft power-building character, but by successfully exploiting international agendas for national and domestic political gain. This interplay of external drivers (donor agendas, geopolitical goals) with internal political considerations is a rich area that current theoretical frameworks only partially cover. For instance, does reliance on foreign funding create a form of external accountability or instead empower regimes with new resources? And what happens when funding dries up? Answering these questions requires combining insights from energy policy, international political economy, and security studies.

This discussion may further reward integrating development studies and international relations perspectives into energy transition theory. For example, adapting dependency theory or world-systems theory to the green energy era to interrogate if renewables alleviate global inequalities or create new core-periphery dynamics of green technology and finance. New frameworks may better capture how transnational forces (capital, norms, great power competition) condition domestic renewable politics, so that strategies can be devised to maximize local benefits and autonomy.

Lastly, we also note implications for policymakers. When megaprojects are chosen, it remains key to develop and effectively implement new and existing tools that seek to genuinely include local populations in the design and decision-making progress, and to more generally minimize any negative impact on these communities. The development of decentralization rests on developing policy solutions that align the incentives of a majority of key stakeholders, or at the very least minimize the circle of losers. Either in absence of or in conjunction with such policies, empowering the state institutions that favour centralization over their intra-state opponents could yield results.

Notes

1. https://www.lemonde.fr/afrique/article/2021/05/06/au-maroc-les-rates-de-la-strategie-solaire_6079389_3212.html?srsltid=AfmBOorq5Ur4TyIGxnnd_RIZA0OnSPKb6ZLFrvVbgOaGP0gGnrOJ8Qyy.
2. Interview with IRESEN and ex-MASEN employee.
3. Interview with MASEN employee, June 2026.
4. <https://medias24.com/2025/04/23/akhannouch-le-maroc-atteindra-52-du-renouvelable-dans-son-mix-electrique-des-2026-au-lieu-de-2030/> [last accessed on 2 November 2025]. These figures refer to installed capacity and not actual electricity production mix. The latter still show a substantial dependence on fossil fuels, above all coal. Nevertheless, renewables’ share in electricity production has

risen significantly, from 6% in 2008 to 24% in 2024, and is forecast to reach 35% by 2027 (International Energy Agency, 2010, 2025).

5. See for instance (Schmitt, 2018) for an overview of DESERTEC and its challenges.
6. MASEN was initially set up as the Moroccan Agency for Solar Energy. In 2016, it was renamed and tasked with managing the development of all renewable energies in Morocco. The remaining 75% is owned by Saudi developer and operator Acwa Power.
7. This is very different from other countries (e.g. Germany), which used feed-in tariffs to incentivize decentralized electricity production by private and local public actors.
8. Law 13-09 was initially conceived mainly to attract large independent power producer (IPP) investors producing electricity for the high voltage grid. Law 82-21 was the key framework for self-production.
9. The deficit figured in the original business plan, stemming from the gap between MASEN's purchase price of roughly 1.62 MAD/kWh before selling it on to ONEE for only 0.8 MAD/kWh. The gap was supposed to be covered by the Ministry of Finance, and the World Bank also offered a credit facility. Noor is said to never have reached even the World Bank's relatively conservative output projections, and MASEN's operational deficits and debt levels mean that it now struggles much more to raise finance. Interviews with former World Bank employee and journalist, June and July 2026.
10. To be sure, the Moroccan leadership has always seen energy as a strategic sector crucial for national security. But in this regard, it does not differ much from many other LMICs, where a 'greater intensity of redistributive politics' means that remaining in charge of the provision of water and electricity – both of which are subsidized in Morocco – is politically vital (Dubash & Morgan, 2012, p. 261).
11. Interview with MASEN employee, June 2026.
12. Interview with Diplomat, February 2025.
13. Interview with World Bank employee, June 2026. Nicolai (2026) is right however to point out that ONEE's claims regarding potential overloading of the grid were essentially unverifiable due to a lack of transparency. An energy consultant observed that ONEE engineers are fundamentally quite skeptical of renewables due to their intermittent nature and continue to think primarily in grid-stability terms, amounting to an 'objective alliance' between ONEE and the Ministry of Interior. Interview with energy consultant, July 2026.
14. Interview with MASEN employee, June 2026.
15. Interview with KfW employee, February 2025. One could also cite the protests that ensued from South Africa's electricity generation crisis.
16. Interviews with current and former MASEN and World Bank employees, June 2026.
17. <https://ecoactu.ma/moyenne-tension-energies-renouvelables-onee/> [last accessed on 2 November 2025]. In addition to ONEE's long-term contracts with large private producers, for example a 30-year contract with the consortium operating the 1386 MW Safi coal power plant, being legally required to purchase significant additional injections of excess electricity from small and medium producers would become very costly.
18. Interviews with solar expert and journalist and with World Bank employee, June and July 2026.
19. Ibid. Interviews with solar expert and journalist and with World Bank employee, June and July 2026.
20. Interview with World Bank employee, June 2026.
21. <https://medias24.com/2023/09/04/decryptage-la-loi-sur-lautoproduction-electrique-reste-inapplicable-malgre-la-promotion-lancee-par-le-ministere/> [last accessed on 2 November 2025].
22. Ibid. (<https://ecoactu.ma/moyenne-tension-energies-renouvelables-onee/>) (own translation). Another news report from 2022 quotes official sources saying that 'for the past decade or so, discussions between [MASEN, ONEE and the Ministry of Interior] – when there were any – could be very tough. The new teams managed to restore a climate of trust that prioritizes the general interest before all else', obviously suggesting that the latter was not the case for much of this period. <https://medias24.com/2022/10/03/electricite-la-moyenne-tension-est-enfin-ouverte-au-solaire/>.
23. <https://medias24.com/2026/06/18/autoproduction-le-maroc-tient-il-enfin-son-cadre-ou-seulement-une-amorce-1702209/>.
24. <https://medias24.com/2026/06/18/autoproduction-le-maroc-tient-il-enfin-son-cadre-ou-seulement-une-amorce-1702209/>.
25. Interview with energy consultant, July 2026.

26. Interview with energy consultant, July 2026.
27. Although under this capacity threshold a declaration of one's installation to the authorities is enough, the delivery of a receipt for the declaration delivered by the authorities is said to effectively turn this procedure into a de facto authorization regime. Interview with energy lawyer, July 2026.
28. A GIZ employee invoked the French 'Gilets Jaunes' as a cautionary tale of a lack of control over energy prices. Interview with GIZ employee, February 2025.
29. Most of our interviewees believed that Noor Ouarzazate and similar projects bring infrastructure to parts of the country that may otherwise not have received them, while acknowledging that the plants have been disappointing in terms of providing jobs for local communities.
30. Interviews with MASEN employee, June 2026, and IRESEN and ex-MASEN employee.
31. This includes disputes between MASEN and ONEE over the CSP/PV split.
32. <https://www.reuters.com/world/africa/moroccan-solar-plans-hampered-by-dispute-over-technology-2024-02-27/>.
33. This approach is common in the realm of development aid (Horning, 2008; Peiffer & Englebert, 2012).
34. Interview with former World Bank official, February 2025.

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