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Centre for Climate Diplomacy

Overcoming Political Risk in Renewable Energy Investments: Insights from Developing Countries

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About the Author

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Summary

- This Insight examines an obstacle to attaining the COP28 goal of tripling renewable power generation capacity: the political risks that impede foreign investment into wind and solar capacity, particularly in the developing world. Political risk is an underappreciated variable in the skewed installation of renewables that favours the developed world and China, where 86% of global wind and solar capacity had been installed by the end of 2022. By contrast, just 14% of wind and solar capacities operated in the developing world.
- Blame for the disparity is often pinned on high capital costs. But capital premiums are a symptom of the political risks arising in domestic power markets. Structural characteristics of renewable energy (RE) investments, such as low rates of return, large upfront capital costs, and lengthy cost recovery phases, leave them vulnerable to changes in regulation and taxation. By contrast, export-oriented oil and gas investments are often able to avoid or bear these risks. A pair of case studies highlights the issues.
- In short, while petroleum investors have found ways to cope with and reduce the effects of political risks so their ventures can operate in some of the world's most risk-prone settings, renewables firms have not yet reached such a point. Political risks still render solar and wind projects in the developing world less 'bankable' than oil and gas, and less attractive than investment opportunities in rich world countries with robust legal and governance institutions.
- Greater understanding of the risks can inform investment practices of firms based in the United Arab Emirates which are already major RE investors in the developing world.
- The Insight provides policy recommendations that address specific risks cited in the analysis.
    - Ensure payments to independent power producers are secured by local laws, with insurance from multilateral banks to cover underpayment.
    - Set power prices in the form of stable and long-term tariffs to assure investors that terms will be honoured even over long payback periods.
    - Impose efficient and transparent dispute resolution processes for legal challenges.
    - Ensure grid access sufficient to avoid curtailment.
    - Seek contracts specifying that laws affecting the project will stay the same for the duration of the project.
    - Seek agreement with host governments to issue a 'put option' for developers allowing them to demand that the state purchase the power plant by a certain date at a pre-agreed price. At the same time, the investors can also allow the host government a 'call option' to purchase the plant.
    - Reduce currency risk through obtaining debt financing in the host country's currency, by hedging, or by using hard currency only as collateral for a local currency loan.
    - Reduce convertibility risks through political risk insurance or guarantees from the World Bank's Multilateral Investment Guarantee Agency.
- Other institutional recommendations for a more investment-conducive environment include:
    - setting proactive targets for renewable generation capacity;
    - streamlining permit procedures in the power sector;
    - designing flexible markets to handle price swings; and
    - removing policies that favour fossil fuels or balance them with incentives for renewables.

The Issue

A key agreement emerging from the 2023 UN Climate Change Conference, or COP28, in Dubai was the aim to triple global renewable power generation capacity by 2030. Attaining this ambitious goal will be daunting. Global renewables capacity in 2023 was just over 4,000 gigawatts (GW), including wind, solar, hydropower and bioenergy. Tripling this capacity within seven years requires the installation of an additional 8,000 GW, to attain a total of nearly 12,000 GW. The International Energy Agency (IEA) forecasts that solar and wind generation will dominate new capacity additions, projecting 4,500 GW of new solar and 1,700 GW of wind by 2030 in its most aggressive scenario.[1]

To date, however, some 86% of global wind and solar power is produced in China and the wealthy countries of the Organisation for Economic Cooperation and Development (OECD), which is disproportionate to the 69% share of global power generated in those states.[2] Attainment of the COP28 goal will require an expansion of investment into non-OECD countries beyond China. These countries happen to be home to 65% of the global population and 31% of power generation, but just 14% of the world's renewable power production (see Table 1). An examination of foreign direct investment into renewables globally shows that of the more than 3,200 announced investment projects, 70% were destined for the OECD and China (see Figures 1 and 2).[3]

Numerous obstacles hinder the comprehensive expansion of clean power production. These include (but are not limited to) minerals and materials' supply chains for renewable energy (RE) that require long start-up times – particularly for expansion of mining; shortages of land sites for some technologies in some geographies; increasing frequency of public and political opposition to such projects; and, of course, the well-known issue of high and uncompetitive capital costs, particularly in underdeveloped countries.

Given the rise in global inflation since 2021—averaging above 8% in 2022—increasing costs of materials have exacerbated effects of higher interest rates on lending, causing cancellations of several wind power projects that had been agreed under more favourable macroeconomic conditions.[4]

One of the key obstacles to the attainment of the COP28 renewables' goal is the disproportionate harm that political risks impose on renewables investment, particularly in the developing world. Political risk is an underappreciated variable in the skewed installation of RE. While the problem of the under-installation of RE in underdeveloped countries is well known, much of the public discourse on the problem appears to pin blame on high capital costs, which are a symptom of deeper foundational problems rooted in higher political risks, as well as on disproportionate exposures to such risks versus comparable investments in other energy sectors, like oil and gas extraction.

In short, while petroleum investors have found ways to cope with and reduce the effects of political risks, renewables firms have not. Political risks still render solar and wind projects in the developing world less 'bankable' than oil and gas or renewables projects in rich world locales. High capital costs and weak foreign investment flows are symptoms of more acute risk exposures.

[1] International Energy Agency (2024)

[2] Figures from Energy Institute (2023)

[3] GlobalData LLC., Power Sector Data, FDI Projects, Renewable and Alternative Power, Jan. 2018 to February 2024.

[4] Priscila Azevedo Rocha and Christian Wienberg, "Orsted Takes $4 Billion Hit on Abandoned US Wind Projects." Bloomberg News, Nov. 1, 2023; https://www.bloomberg.com/news/articles/2023-11-01/orsted-drops-us-wind-projects-taking-4-billion-impairment-hit?sref=Q77DYrNe

Table 1: Skewed distribution of global wind and solar installations

	% of global wind and solar capacity	% global power generation capacity	% global population
OECD + China	86	69	35
Rest of the world	14	31	65

This matters for the UAE and the Gulf because regional firms are major developers of renewable power within the Gulf Cooperation Council countries, as well as major investors in renewable capacity outside the region. Abu Dhabi's Masdar is a major RE market player and, given its capabilities, could become a key contributor to achieving the COP28 renewables goal. Per Masdar's current disclosures, the company has stakes in clean energy investments in three dozen countries and plans to expand that number.[5] Saudi Arabia's ACWA Power is also a major investor in renewable power outside its home market. Investors and developers in the Gulf are among those exposed to the political risks outlined in this Insight.

Finally, the political risk factors examined here are those facing foreign investors, not energy consumers or host governments. When it comes to issues of national energy security—and particularly supply chain risk—renewables have distinct advantages over fuel-based systems. These advantages arise largely because renewables do not use fuel to generate power, which safeguards consumers from spiking fuel prices and supply chain interruptions from myriad causes. Risks to renewables' supply chains only affect future capacity, not plants in operation.[6] In RE systems, it is the investor who bears the largest risk.

Renewable Energy Ventures Versus Oil and Gas

For oil and gas investors, coping with precarious political systems has been a familiar hazard over more than 150 years of hydrocarbon exploration. For wind and solar developers, the costs of venturing out of the developed world are no less substantial. Financing costs can be up to seven times higher than those in the United States and Europe, according to the IEA. Capital costs in some settings are high enough to outweigh capacity factor advantages from high solar radiation or wind resources. Country-related risks and underdeveloped local financial systems are to blame for much of the disparity.[7]

What factors allowed oil and gas investments to move ahead in an environment that looks too risky for wind and solar? The wave of oil and gas expropriations in the 1970s, when control of global petroleum resources shifted from shareholder-owned Western multinationals to national oil companies (NOCs) of the developing world, was the largest of several expropriation trends in the sector. As recently as 2012, the government of Argentina fully nationalised the local holdings of Spain-based firm Repsol, demonstrating the acute political risks in energy-based foreign direct investment (FDI). Yet, a year later, Western oil majors returned to Argentina and launched another round of upstream investment.[8]

[5] Masdar, "Our Projects." Webpage, viewed Jan. 31, 2024; https://masdar.ae/en/renewables/our-projects

[6] (Colgan et al., 2023; IRENA, 2023; Krane & Idel, 2021; Overland, 2019)

[7] Persaud estimated the premium at 6% in 2022, while the IEA found it to be as high as 7%. See: Persaud (2023). See also: International Energy Agency (2021)

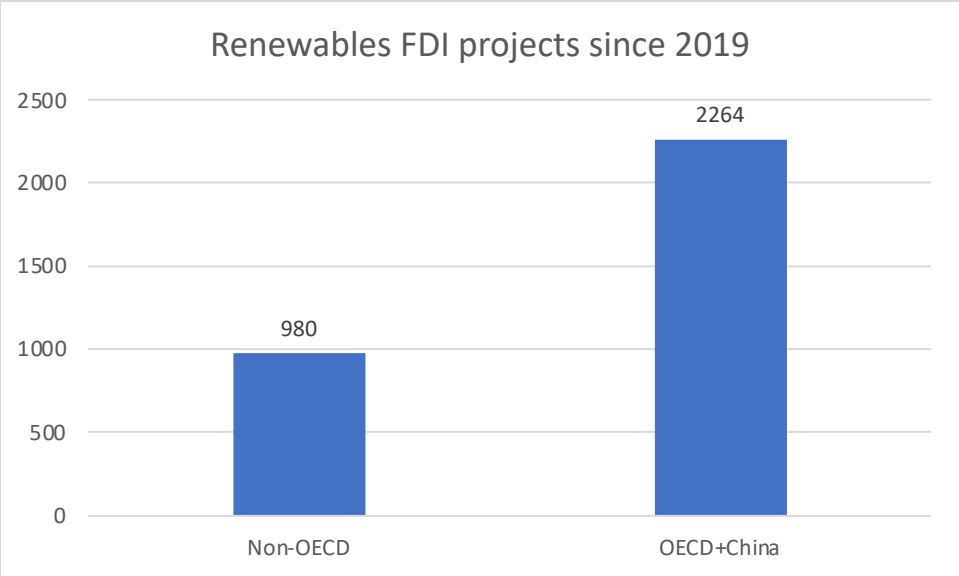
[8] Collins et al. (2021)

Renewable projects have been scuttled in the same countries where investments into oil and gas have gone ahead—despite high capital costs and risk. The case of Algeria, described in this Insight, finds European Union-based firms successfully investing in upstream oil and gas production to export to Europe. But companies from those same EU countries were hindered in their efforts to invest in Algerian solar power generation and export the resulting electricity to Europe. Among the factors cited in the power export failures are governance risks linked to lack of transparency and accountability that undermine profitability.[9]

The dichotomies in investor experience beg the question, what factors make investment in renewables so much less attractive than ventures in oil and gas in the developing world?

The charts below depict more than 3,200 announced foreign investments (FDI) in renewable electricity generation and related infrastructure since 2019. Not all announced projects were completed. Countries with less than three listed investments were dropped from the second chart for legibility. According to the data, 70% of the projects went to the OECD and China. Just nine countries in the non-OECD accounted for half of the remaining 980 investments: Brazil (150), Romania (60), South Africa (59), Vietnam (47), India (40), the UAE (35), the Philippines (33), Colombia (29) and Egypt (27).

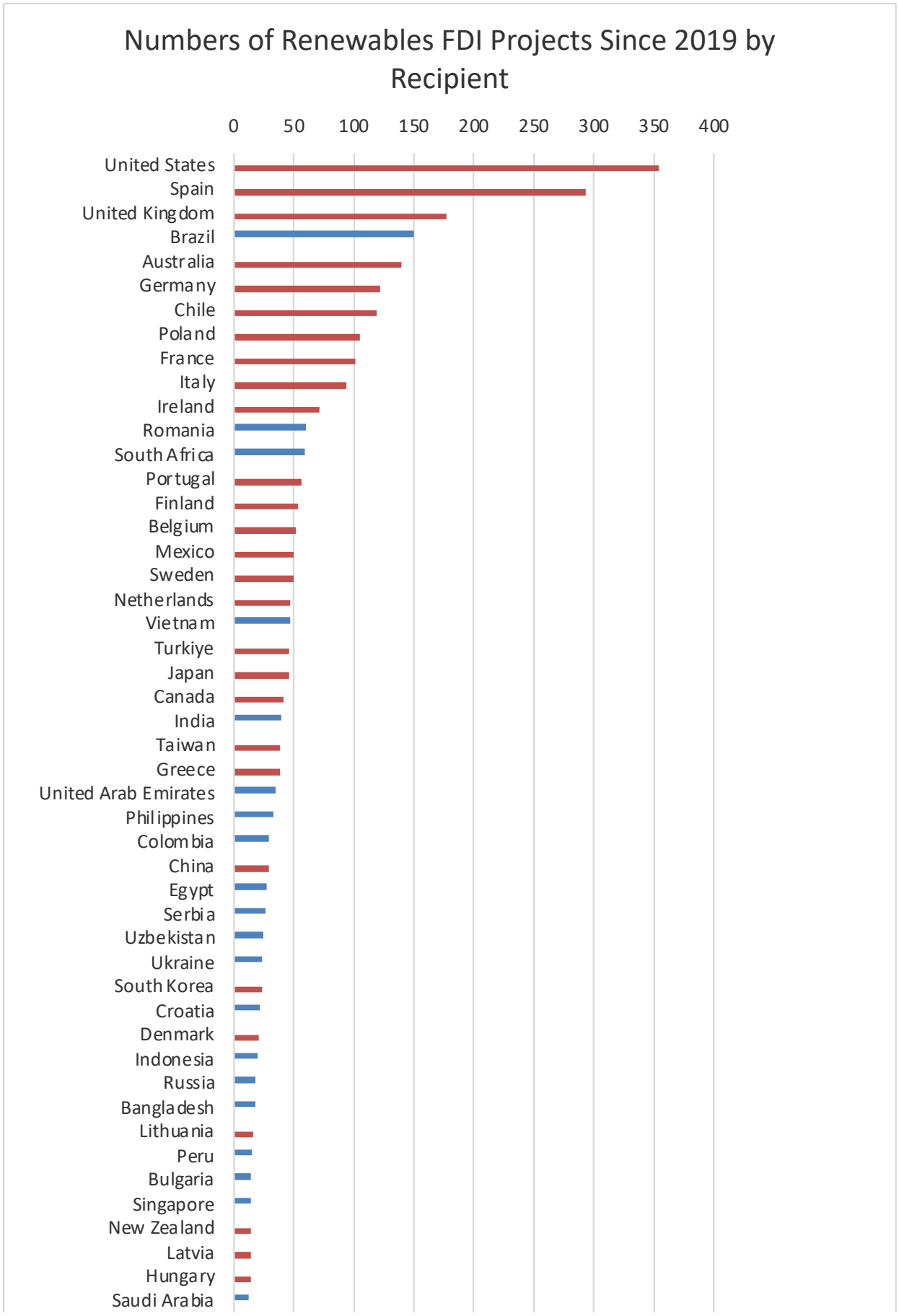
Figure 1: Seventy percent of FDI investment announcements in renewables have targeted the OECD and China.



Source: GlobalData LLC., Power Sector Data 2024, Incoming FDI in Renewables.

[9]Komendantova et al. (2014)

Figure 2: OECD countries (depicted in orange) dominate incoming FDI in renewable energy projects



Source: GlobalData LLC., Power Sector Data 2024, Incoming FDI in Renewables.

Risk Factors and Varying Exposures

Oil and gas investment has long been exposed to changes in host nation laws and regulations that have reduced profitability and ownership stakes. Solar and wind investors have thus far been shielded from these risks, due to investments favouring relatively developed countries where governance institutions are more robust. However, the successful completion of the global transition to clean energy necessitates the investor's entry into the developing world and his engagement with weaker institutions. Renewable energy investors must develop familiarity with the manner by which various political actions can hinder their profitability, in order todevelop strategies to mitigate them.

When comparing characteristics of RE with oil and gas, a few factors stand out in ways that render renewables even more susceptible to post-hoc contractual changes and political changes.

First, are the **higher rates of return** that are typical of successful oil and gas investments, when compared with RE. Higher returns can offset numerous risks because they shorten the cost recovery period required to recoup investment outlays and reach the 'breakeven' point where profitability begins. Projects reaping higher returns can also withstand some level of political interference and post-hoc contract changes that increase the 'take' for host governments and reduce profitability for the investor. In these ways, higher profitability protects oil and gas investments from small changes in terms—often described as 'regulatory expropriation'—that would be sufficient to push a renewables venture into losses.

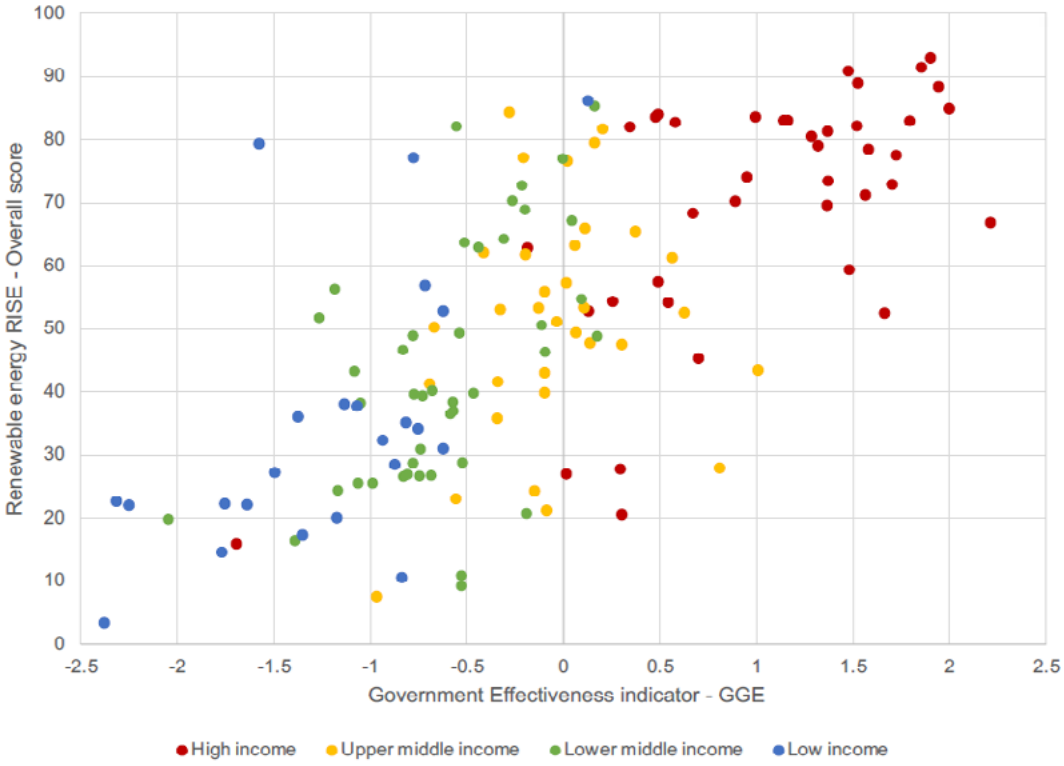
Second, the **larger pools of investment capital** available to oil and gas firms allow them to self-finance exploration and production ventures with reduced requirements for borrowing. Self-financing allows them to invest in locales that lenders might view as too risky. Over time, oil and gas firms have developed strategies to mitigate risk and protect their investments. By contrast, smaller renewable energy firms generally do not have access to internal capital for investment and instead rely on debt or equity financing via loans, bonds, or selling a stake in a project to an investment firm.[10] Lenders tend to be more cautious about where their funds are deployed.

Third, oil projects that aim to produce petroleum for export are less exposed to the typically weak or **unstable legal institutions** in underdeveloped countries. Of course, profitability of any investment is placed at risk in host countries with legal systems that lack impartiality. But vulnerability is exacerbated for projects selling into domestic markets, particularly those with lower rates of return and **longer cost recovery** periods. Without long-term contract stability, few developers are willing to generate and sell wind and solar power in unpredictable legal jurisdictions. Figure 3 shows the strong correlation between government effectiveness and the investment climate for renewables.[11]

[10](International Energy Agency, 2021)

[11](Choe & Ore-Monago, 2023)

Figure 3: Lower government effectiveness (GGE) correlates with poor climate for renewable energy or Regulatory Indicators for Sustainable Energy (RISE).



Source: Choe and Ore-Monago, 2023.

A fourth risk, energy nationalism, is well-known to oil and gas investors but can also affect renewables. During oil price booms, some leaders are often tempted to change terms or expropriate foreign oil concessions. In some cases, foreign oil concessions were taken over by state-owned firms. Renewables are also susceptible to energy nationalism, but it appears to be triggered or manifested in different ways. In countries where power generation fuels are provided by domestic resources, local interests may view foreign developers of wind and solar projects as unfair competitors. Renewables may also be unable to stimulate much community support since RE projects provide few jobs beyond the construction phase, and returns are insufficient for 'patronage' hiring and other 'local content' demands.

The case study in the next section documents how, in Poland, a new administration that came to power in 2015 launched tax and regulatory changes on the wind sector. An investor described these changes as "regulatory expropriation".[12] Policy reversals in Mexico have also favoured so-called 'national' energy sources—mainly fossil fuel plants—through rule changes and dispatch preferences that came at the expense of foreign-owned wind and solar. Such income-reducing ex-post rule changes serve as a form of indirect expropriation.[13] As explained later, wind farms and solar parks are also vulnerable to full expropriation by host governments, because their largely autonomous operations make them easy targets.

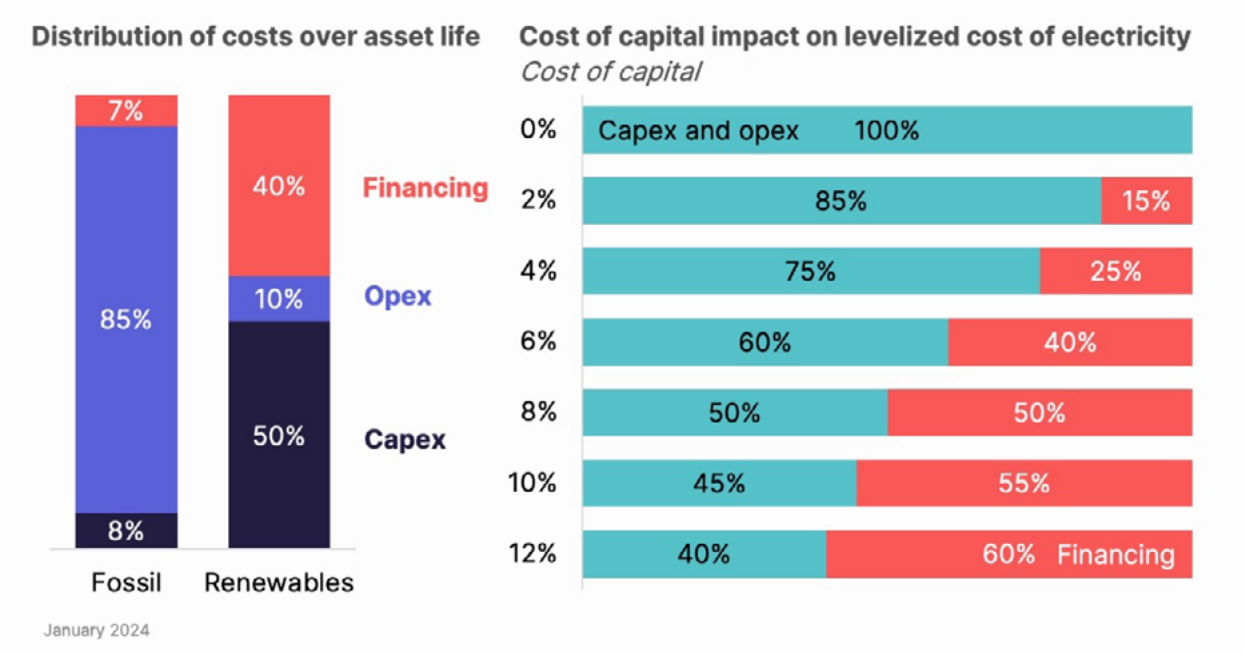
Risk exposures for renewables extend beyond the aforementioned factors that make useful comparisons with experiences of oil and gas investors. Numerous adverse structural factors also render renewables and power investment in general susceptible to expropriation. These include:

[12] James Shotter and Evon Huber, "Invenergy presses Polish government over $700m wind farm dispute." Financial Times, Oct. 15, 2017, https://www.ft.com/content/a26dda50-af3b-11e7-aab9-abaa44b1e130

[13] (Willis Towers Watson, 2021)

- Large sunk costs that precede any flows of revenue—Wind and solar installations require the dominant portion of their investment capital to be sunk up front, before any power can be produced and sold. Figure 4 depicts an average of 50% of a wind or solar project's cost is capital expenditure, versus 8% for a thermal plant burning fossil fuel. That means investors must risk a larger share of their project funding in a foreign jurisdiction prior to the start of any revenue flows.[14]

Figure 4: Costs of renewable projects



* As capital costs rise, financing becomes an ever-larger portion of renewables development costs. At an 8% interest rate, financing assumes 50% of total development costs.

Source: Regulatory Assistance Project, via Nat Bullard January 2024; https://www.nathanielbullard.com/presentations.

- Lengthy cost-recovery phase—The flipside of low returns and large upfront capital requirements are the extended cost-recovery periods that investors must overcome before their wind and solar plants reach profitable operation. Renewable power sales structured as 15- to 25-year Power Purchase Agreements expose projects to changes in host nation leadership. Each incoming administration brings new risk of expropriation, particularly when a project was built under (or associated with) a prior administration from a political opponent. Extended payback periods also expose wind and solar plants to corruption, legal and regulatory changes, and even utility insolvency.

- Cost-recovery difficulties in the power sector—Recovery of investment costs in developing countries' power sectors has been demonstrated to be difficult, regardless of generation technology. World Bank research details numerous examples of host governments granting retail electricity subsidies or being unwilling to impose electricity tariffs sufficient to recoup capital investments. Of 17 cases examined in 2020, the World Bank found only two that managed to achieve full recovery of investment costs. Seven involved state-imposed tariffs which were too low to cover operational costs. The bank concluded that cost recovery is "an elusive goal" for many power sectors in the developing world.[15] Given the pre-existing difficulties with thermal generation, renewables face similar—if not greater—exposures, given the disadvantages of up-front capital and lengthy payback periods.

[14]Investment in unconventional shale oil and gas involves an even more protective series of investment and cost recovery phases that insulate foreign investors from any host government expropriation. As Collins et al have written, the quick decline rates of shale wells require regular bouts of investment in drilling and fracking of new wells to keep production constant. Any host government behaviour that changes the terms can cause investors to withhold further investment which would cause production to fall off. See: (Collins et al., 2021)

- Autonomous operations—One of the attractions of wind and solar plants is the owner's expectation for near-autonomous operation for decades. Solar panels and wind turbines produce power without fuel and require little human intervention beyond cleaning panels and scheduled turbine maintenance (See Opex costs in Figure 4). This allows investors to shift their focus to the next project. But autonomy also simplifies state expropriation, since the foreign-owned asset produces power—and revenue—without on-the-ground expertise. By comparison, natural gas or coal-fired power plants always require constant fuel deliveries as well as manned operational staff on site, along with more extensive maintenance.

- Reliance on power sales to state-owned utilities—Renewable power plants depend on revenues from electricity tariffs that are usually regulated by a government utility. Political calculations can push a government to reduce power prices for customers as a patronage strategy. In some parts of the developing world, low-cost electricity is provided as a social service or even considered a right.[16] A US law firm suggests that countries that fix power tariffs below cost serve as a warning sign to would-be foreign investors that contract sanctity could be sacrificed for domestic political advantage.[17] Lack of payment for power delivered is another common problem. Utilities may fail to pay on time or in full. Of 10 emerging market utilities analysed by Bloomberg New Energy Finance in 2017, only Sri Lanka and Armenia received top scores for paying as promised.[18] Fluctuating currency values also disadvantage local power sales relative to more exportable oil and gas which is priced on international benchmarks.

- Reliance on state monopoly transmission—Renewable projects often require an extension of a government-owned power grid to reach the (at times distant) development site for a wind or solar park. State-owned transmission reliance creates further risk exposures. If governments or utilities are unable to deliver sufficient transmission capacity to offtake peak power production, investors' revenue targets may be unrealisable.[19] Government utilities can also raise transmission charges, impose new fees, or create unfavourable dispatch rules that render foreign-owned plants less competitive with domestic power producers. Excessive curtailment of generated power can be an outcome.

- Reliance on state subsidies—Wind and solar power has grown cheaper and more competitive with conventional thermal generation. Cost-competitiveness has reduced—or eliminated—requirements for state subsidies. However, projects built when costs were higher still require government adherence to original terms, including subsidies, to ensure cost-recovery and profitability. Pressure to alter 'generous' subsidies tends to build over time, as future infrastructure costs decline with improved efficiency. Early investments made under higher cost assumptions may therefore be at risk.

Case Examples

Brief studies of individual cases in Algeria and Poland provide useful illustrations of some of the earlier points.

ALGERIA

The Algerian case allows us to examine risks faced by RE investors alongside those in oil and gas, in the very same market. In Algeria, most foreign investors came from Europe. All sought to export energy—either oil and gas or electricity—back to the European Union, via subsea transmission. Therefore, all variables were held constant, except the effects of political risk.

For foreign investors, Algeria is well known as a source of risks and opportunities. The country ranks consistently near the bottom of the World Bank's Ease of Doing Business Index. In 2019, Algeria sat in the lowest quintile, at 157

[15] (Huenteler et al., 2020)

[16] The experience of the GCC countries with electricity subsidies is covered in depth in (Krane, 2009)

[17] (Willis Towers Watson, 2021)

[18] (Cuming, 2017)

[19] (Willis Towers Watson, 2021)

of 190 countries.[20] Oil and gas investors coped with full state expropriation in 1971 and a re-opening to FDI in 1990s amid the Algerian civil war. In 2013, 40 people were killed in a terrorist attack on a European-Algerian natural gas plant. Taxation disputes between foreign oil companies and Algeria's national oil company Sonatrach have triggered periodic arbitration cases since 2006.[21] Despite these risks, however, European oil and gas firms including BP, ENI, TotalEnergies, Equinor, Repsol and others have managed to invest in Algeria. Much of their production of natural gas is exported to Italy and Spain by three pipelines crossing the Mediterranean Sea.

Success of oil and gas FDI in Algeria contrasts with the failure of various proposals to develop utility-scale renewable power generation and electricity exports to Europe. Encouraged by ideal conditions for wind and solar—including some of the world's highest solar irradiance—European firms have since 2008 explored export-oriented wind and solar arrays. One failed scheme, the Desertec initiative, was an attempt to build out exportable renewable power alongside Algeria's exports of oil and gas. The Desertec consortium included major European shareholders including German utilities E.ON and RWE, insurance firm Munich Re, Siemens and Deutsche Bank. The project's ultimate goal was to provide 15% of EU electricity via wind and solar based in North Africa, with power exports delivered via high voltage direct current cable under the Mediterranean Sea.

Desertec failed for various reasons, including growth of RE installation in Europe alongside opposition of governments in Algeria and Spain, as well as stakeholders' concerns regarding political and force majeure risks, and particularly regulatory risk, given the large up-front sunk costs and long cost recovery phases.[22] Despite ideal its geographic condition, Algeria had under 500 MW of solar power capacity installed at the end of 2022, which generated a tiny fraction of its domestic power and no exports.[23] The Algerian case suggests that risk factors that might be manageable for oil and gas investors can appear challenging for wind and solar.

POLAND

Another cautionary tale is found in the travails of foreign wind power investors in Poland. Here, regulatory changes of the sort that might be tolerable for oil and gas projects were unendurable for wind. The case relates to post-hoc changes to regulations governing wind farm siting and taxation that were imposed after a national election in 2015 brought a change in governing party.

The incoming government imposed new restrictions on onshore wind including the so-called 10H rule, which restricted wind turbines to a minimum distance of 10 times the maximum height of the wind power plant from homes or certain natural areas. The height restrictions rendered about 99% of Polish territory off-limits to state-of-the-art towers and blades, halting projects that had reached final investment decisions and causing financing agreements to expire. A collapse in wind installations ensued until installers opted for shorter towers and smaller turbines (2-3 MW instead of 5 MW or greater). The restrictions had the paradoxical result of rendering newer wind farms less efficient than older installations, bringing about productivity decreases (through lower capacity factors) and higher-cost power.[24]

US renewables firm Invenergy reported $700 million in costs due to post-hoc contractual changes that reduced revenues from Polish wind farms. Invenergy's arbitration case against the Polish government alleged that the

[20] World Bank, "Ease of doing business rank." Online database (Washington: World Bank 2021), https://data.worldbank.org/indicator/IC.BUS.EASE.XQ?locations=DZ

[21] (Brown & Zaimeche, n.d.; US Department of State, 2021)

[22] (Komendantova et al., 2012), Also see: Thomas M. Schmitt, "(Why) did Desertec fail? An interim analysis of a large-scale renewable energy infrastructure project from a Social Studies of Technology perspective." Local Environment, 23:7, 747-776, DOI: 10.1080/13549839.2018.1469119

[23] (Energy Institute, 2023)

[24] (Polish Wind Energy Association, 2022)

incoming government pressured Polish offtakers to terminate contracts that had already been signed. The government imposed other conditions that were "tantamount to an expropriation," since power sales into the Polish market ensued at prices far below those agreed.[25] The case remained in international arbitration at the time of publishing this Insight. (In 2023, the distance restriction was relaxed to 700 meters which allowed a modest restart of wind projects in a few areas.[26])

In 2017, the Polish government also changed property tax assessments of wind farms. Where previous assessments only placed a tax valuation on the foundation and tower (less than 30% of the total property value) the new formula included the entire value of the wind installation. As a result, property taxes increased dramatically. The modest change in tax legislation served to further reduce profitability of Polish wind farms, which already coped with modest rates of return—around 10% or less. In 2018, the tax change was rescinded and prior legal regime was restored.[27]

The cases of Algeria and Poland demonstrate that investments in low-return and capital-intensive wind and solar projects require greater attention to regulatory and institutional stability. Environments where oil and gas can generate positive returns are not necessarily conducive for renewable power.

POLICY RECOMMENDATIONS

Reducing political risk for UAE and Gulf investors in RE in the developing world can be addressed at various levels. This Insight's recommendations focus on incremental 'micro' level policy changes that are simpler than sweeping institutional changes that might address root causes. Effective policies that developing countries can adopt include codifying renewables incentives to serve as prerequisites for investment flows. A 2021 survey of more than a hundred countries found African states with the least attractive RE, where the ones fostering aninvestment environment with a "lack of supportive policies and well-structured, reliable power markets":12% of the surveyed countries have no policy mechanisms in force and 24% of them disposed of just one such policy.[28]

As Gulf economic diplomats seek to support their home firms exploring investment opportunities abroad, they can use the tools at their disposal to train companies in negotiating the following contract provisions or lobby foreign governments for the following policy adjustments:[29]

- Offtaker risks: Non-payment by state utility for electricity provided can be mitigated by seeking legislative support in the host country, so that payments to independent power producers are secured by law. Insurance to cover underpayment is sometimes available from multilaterals such as the African Development Bank.
- Tariff-based power procurement: Developers and the host government should seek stable long-term power pricing to assure investors that terms will be honoured even over long payback periods.
- Dispute resolution: Impose efficient and transparent processes for legal challenges and disputes with a limited time allotted for resolution and a state authority to screen disputes.
- Grid connection risks: Connection and curtailment terms should be part of the agreement with the host government, ensuring grid access sufficient to avoid curtailment. Contracts can also be structured to require offtakers to cover curtailment losses as part of the electricity tariff.

[25] James Shotter and Evon Huber, "Invenergy presses Polish government over $700m wind farm dispute." Financial Times, Oct. 15, 2017, https://www.ft.com/content/a26dda50-af3b-11e7-aab9-abaa44b1e130

[26] US International Trade Administration. "POLAND ONSHORE WIND ENERGY 10H DISTANCE RULE LIBERALIZED." April 18, 2023; https://www.trade.gov/market-intelligence/poland-onshore-wind-energy-10h-distance-rule-liberalized

[27] Polish Wind Energy Association, "Wind Energy in Poland 4.0," NGO report (Warsaw: PSEW, May 2022) pp. 115-16.

[28] (Maia et al., 2022)

[29] Sources for policy recommendations include the author's own as well as GWEC, (International Renewable Energy Agency & Global Renewables Alliance, 2023); (Cuming, 2017)

- Stabilisation clauses: Foreign investors can try to indemnify themselves from changes in law by seeking contracts that specify that laws affecting the project will stay the same for the duration of the project.
- 'Get out' option: Host governments can agree to give developers a 'put option' allowing them to demand that the state purchase the power plant by a certain date at a pre-agreed price. At the same time, the investors also allow the host government a 'call option' to purchase the plant. By providing investors a profitable exit, reciprocal 'put-and-call' options allow developers to take a chance in uncertain legal environments.
- Currency risk: Options include obtaining debt financing in the host country's currency, hedging, or using hard currency only as collateral for a local currency loan.
- Capital controls and profit repatriation restrictions: Convertibility risks can be mitigated with political risk insurance or guarantees from the World Bank's Multilateral Investment Guarantee Agency.

The following recommendations address 'institutional' deficiencies for a more investment-conducive environment that developing economies seeking to attract FDI in RE should consider promoting:

- Proactive targets: Host governments should set clear and ambitious targets for renewable generation capacity, schedule procurements and grid expansions, and set aside land and seabed for generation and transmission.
- Streamline permitting: Create a single bureaucracy to oversee permitting in the power sector, and remove sub-national and local requirements. Set time limits on application responses.
- Flexible market design: Reconfigure power procurement to cope with intermittent generation and required backup generation, along with ancillary services required to match supply with demand. Markets need to be able to handle price swings that reflect periods of high and low renewables production, and provide investors with stable returns.
- Fiscal support: Host governments should remove policies that favour fossil fuels or balance them with incentives for renewables. These include exempting or eliminating import tariffs on RE components, as well as reforming subsidies on fuel commodities used in thermal power generation.

CONCLUSION

Investors looking to build wind and solar generation arrays in underdeveloped countries face daunting risk hurdles. Among them are higher costs and greater uncertainty about cost recovery than comparable ventures in the OECD and China. One can understand the reluctance to venture into new settings, when so much sunk capital investment is put at risk, and when low rates of return suggest that payback periods might endure for a decade or longer. Hazards range from seemingly small tweaks in tax code that impinge on profitability, to outright state expropriation of operating wind or solar parks. Debt financing is more expensive in these locales. And weak institutions mean that contractual sanctity may be little more than a buzzword.

These factors are expressed in capital costs that are high enough to outweigh natural advantages of regions with strong winds and abundant sunshine. Risk exposures loom larger for renewables than for traditional fossil fuel ventures. Renewable projects have been scuttled in the same countries where oil and gas investments have gone ahead—despite the same risk environment.

This matters for the UAE and the Gulf region. The Gulf is not just a major installer of renewable power, but plays host to firms that are major investors in renewables capacity outside the country. Gulf investors are among those most potentially affected by political risks discussed here. By outlining these risks and gathering potential remedies from the literature, this Insight intends to inform the Gulf investor community about pitfalls that they may overcome and the Gulf economic diplomats on areas in which they may want to influence policy making abroad to ensure that the ambitions of the Dubai COP28 can be realised.

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