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GREEN ENERGY MARKETING UNDER GOVERNMENT INCENTIVE SCHEMES: STRATEGIC RESPONSES OF ENERGY FIRMS

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ABSTRACT

Government incentive schemes have become a pivotal driver of renewable energy growth worldwide, prompting varied strategic responses from energy firms. This study examines how companies adapt their marketing and investment strategies under such incentives, drawing on international examples and data from the last decade. The findings indicate that robust incentive policies (e.g. feed-in tariffs, tax credits, renewable portfolio standards) are correlated with significantly faster growth in renewable energy capacity and encourage firms to pivot towards green energy offerings. Energy firms respond by increasing renewable investments, rebranding with sustainability themes, and leveraging incentives in marketing campaigns to attract consumers and investors. However, the effectiveness of incentives in altering firm behavior is not uniform – some policies lead to transformative change, while others have had limited impact or unintended consequences. By analyzing renewable energy trends in key countries alongside firm-level strategy shifts, the paper highlights the critical role of stable, well-designed incentives in enabling a clean energy transition. It also underscores that firms combining incentive-driven investment with authentic sustainability marketing can achieve competitive advantages. The insights contribute to understanding how public policy and corporate strategy intersect in the renewable energy sector, offering recommendations to policymakers and industry leaders for fostering more effective collaboration in the pursuit of climate and energy goals.

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1. INTRODUCTION

Governments around the world have increasingly implemented incentive schemes to accelerate the transition to green energy. These incentives, ranging from feed-in tariffs and tax credits to renewable energy targets, auctions, and grants, aim to improve the economic attractiveness of renewable technologies and reduce investor uncertainty. Their aggregate influence is visible in global electricity trends: renewable sources accounted for around 30% of worldwide electricity generation in 2023 and are expected to continue rising under sustained policy support (IEA,

2024). By the early 2020s, more than 130 countries had adopted some form of renewable energy target or support mechanism (REN21, 2023). Yet the central academic question is not simply whether incentives matter, but how they reshape firm strategy across different market and institutional settings.

A growing body of research has examined the effectiveness of renewable energy incentives, but the literature remains fragmented across policy evaluation, sustainability transitions, and corporate strategy. Many studies confirm that well-designed incentives can substantially boost renewable deployment. For instance, Nicolini and Tavoni (2017) found that feed-in tariff subsidies in Europe were highly effective, estimating that a 1 Euro-cent increase in FIT rates led to an 18-26% increase in renewable electricity capacity. Cross-country panel analyses likewise show that market-based instruments, fiscal incentives, R&D support, and policy targets can significantly expand renewable capacity (Liu et al., 2019). Kilinc-Ata (2016) compared policies across the EU and the United States and concluded that feed-in tariffs, competitive tenders, and tax incentives generally outperformed quota-based obligations. These findings indicate that incentives affect investment behavior, but they say less about the strategic pathways through which firms respond.

Other studies show that incentives do not operate mechanically and may produce uneven outcomes when market conditions, institutional credibility, or implementation capacity are weak. Jenner et al. (2013) found that broader electricity-market conditions sometimes mattered more than formal incentives, while Karneyeva and Wustenhagen (2017) showed that abrupt policy change can undermine investor confidence even when renewable technologies are becoming more competitive. This line of research suggests that firms respond not only to the nominal existence of incentives, but also to their durability, predictability, and compatibility with market structures. In other words, the strategic effect of policy depends on both incentive design and policy credibility.

This study therefore adopts a more explicit conceptual lens. It treats government incentives as strategic signals that influence firms through three mechanisms: first, economic repricing, by changing expected project returns; second, strategic legitimation, by making green investment and green branding more acceptable to investors, regulators, and customers; and third, capability formation, by encouraging firms to build new organizational routines, partnerships, and business models around renewables. On that basis, firm responses are expected to cluster into four pathways: portfolio reallocation, market communication and branding, business model innovation, and regulatory positioning. This framework moves the paper beyond the general claim that incentives influence firm behavior and clarifies the channels through which that influence unfolds.

The marketing dimension is especially relevant but often undertheorized in the energy-policy literature. When incentives reduce end-user costs or expand renewable market visibility, firms gain new grounds for price framing, sustainability framing, and investor communication. In liberalized retail markets, installers and utilities can translate incentives directly into customer-facing messages such as rebates, tax advantages, or long-term bill savings. In less competitive or more state-directed systems, marketing is directed less at final consumers and more at investors, regulators, and public legitimacy. This distinction helps explain why green energy marketing is more pronounced in some countries and more muted in others, even when incentives are strong.

A notable strategic response among incumbent energy firms is the acceleration of diversification into renewable technologies. Hockerts and Wustenhagen (2010) describe a dynamic of greening

Goliaths versus emerging Davids, where incumbents gradually adopt sustainable innovations that new entrants embrace earlier. In energy markets, that pattern is visible in the way established utilities and fossil-fuel-based firms entered wind, solar, and related services once incentives made such investments financially and reputationally attractive. Examples such as RWE, NextEra Energy, and Orsted show that incentives can trigger not only incremental project additions but deeper strategic repositioning.

At the same time, incentives can also generate superficial or opportunistic responses. Some firms expand renewable assets mainly to capture temporary subsidies, overstate their environmental transformation in corporate communication, or lobby selectively for incentives while resisting broader climate regulation. Recognizing this variation is part of the paper's contribution. Rather than assuming a uniform corporate reaction, the study distinguishes between substantive strategic adaptation and symbolic adaptation. The empirical goal is therefore to identify how different incentive environments shape the depth, form, and credibility of firm responses.

Materials and Methods

This research employs a mixed-method design that combines comparative trend analysis with structured qualitative case studies. The empirical period is 2015-2024, a decade during which many jurisdictions intensified renewable energy policy support and firms had enough time to translate those signals into observable strategic responses. The study proceeds in two connected steps: first, a cross-country examination of renewable energy growth under different policy regimes; second, a structured analysis of how major energy firms adapted their portfolios, market communication, and organizational strategies under those regimes.

For the quantitative component, data were compiled from IRENA, IEA, national energy reports, and firm disclosures. Five focal countries were selected for detailed comparison: Germany, the United States, China, India, and Russia. They provide meaningful institutional variation, from highly supportive and stable policy environments to comparatively weak or inconsistent ones. Rather than relying only on the raw number of incentive schemes, the revised analysis uses a policy intensity index that combines three dimensions of support: financial attractiveness, implementation stability, and market coverage. Each dimension was scored on a common scale using policy documentation and prior literature, then aggregated into an index to capture the practical strength of the incentive environment more realistically than a simple policy count.

The policy intensity index was then compared with renewable capacity growth across a broader sample of 20 countries. The regression should be read as exploratory rather than causal. Its aim is to test whether stronger policy environments are systematically associated with higher renewable expansion after controlling for GDP per capita and initial fossil-fuel dependence. This design does not eliminate endogeneity: countries that are politically more favorable toward renewables may also be more likely to adopt stronger incentives. Accordingly, the regression is used to identify patterned association, not to claim definitive causal effects. This limitation is stated explicitly because policy ambition and market outcomes co-evolve.

For the qualitative component, the paper applies a structured comparative case-study logic rather than using firm examples only illustratively. Cases were selected to capture variation in ownership type, national policy setting, and degree of renewable transition. The analysis focuses on four dimensions derived from the conceptual framework: (1) portfolio reallocation toward renewables, (2) marketing and communication responses, (3) organizational and business model reconfiguration, and (4) strategic positioning toward regulation and policy. Evidence was

triangulated across annual reports, public strategy statements, industry analyses, and secondary academic sources to strengthen consistency.

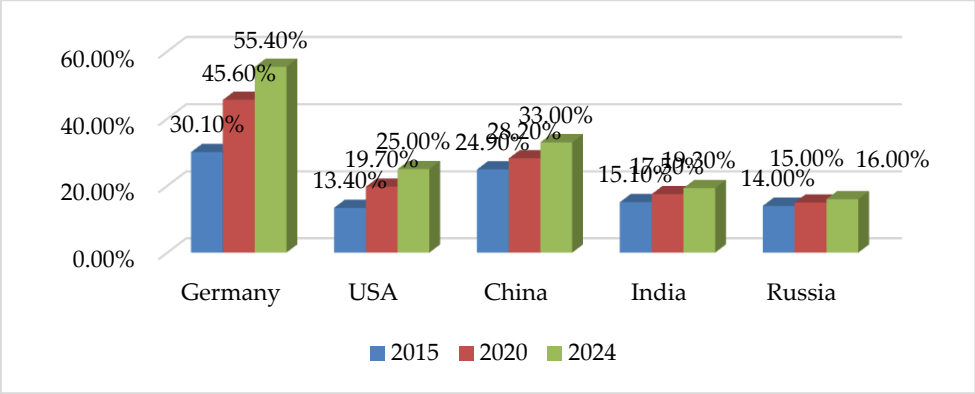
To ensure reliability, multiple sources were cross-checked for each data point and interpretive claim. Renewable generation and capacity statistics reported in the tables were verified against IRENA and national or company-level reporting. Policy descriptions were compared with IEA or IRENA policy databases and official announcements. Firm-specific evidence on strategic responses was not limited to installed capacity; it also included investor communication, public sustainability positioning, and documented organizational changes such as new renewable divisions, asset restructuring, acquisitions, and partnership models. This broader evidence base supports the paper's claim that incentives affect both investment behavior and market communication.

Methodologically, the study remains bounded in scope. The sample is modest, policy scores inevitably involve researcher judgment, and firm-level marketing responses are assessed through disclosed communication and strategic materials rather than through a dedicated content-analysis dataset. Even so, the combined design offers a more rigorous basis than a purely descriptive account because it links a transparent conceptual framework, a more nuanced policy measure, and a structured case protocol. The purpose is not to estimate a final causal model for all energy markets, but to explain recurrent strategic patterns and their policy conditions.

Results and Discussion

The cross-country comparison reveals a consistent positive association between stronger incentive environments and faster renewable energy expansion, but it also shows that policy strength matters more than the mere existence of multiple instruments. Countries with high policy intensity, meaning incentives that were financially meaningful, durable, and broad in market reach, achieved the strongest gains. Germany, for example, increased the renewable share of electricity generation from about 30% in 2015 to roughly 55% by 2024 under a long sequence of stable support mechanisms. By contrast, Russia, where renewable support remained narrow and weak, moved only marginally. The contrast suggests that firms respond most strongly when incentives alter expected returns and reduce uncertainty at the same time.

Graph 1. *Renewable energy share of electricity generation in selected countries (%).*



Source*: Compiled from IRENA and national energy reports (2016–2025).*

The renewable share includes all renewable sources in gross electricity generation. Germany's rapid increase reflects the combined effect of long-term support, credible implementation, and a

market environment in which firms could invest with confidence. The United States benefited from tax incentives and state-level mandates, but the fragmented architecture of support produced more uneven responses across regions. China combined strong subsidies, quotas, and state direction, generating extraordinary scale. India expanded quickly in selected segments, especially solar, yet inconsistent implementation reduced the translation of policy intent into system-wide transformation. Russia's near-flat trajectory illustrates the limited strategic response that emerges when incentives remain weak or narrow.

The United States also made notable progress, increasing renewable generation from roughly 13% to 25% of its electricity between 2015 and 2024 (Graph 1). U.S. growth was fueled by a combination of federal tax incentives (the Production Tax Credit for wind, Investment Tax Credit for solar) and state-level Renewable Portfolio Standards (RPS) that required utilities to integrate more renewables. The effect of these incentives can be seen in the surge of wind farms across the Great Plains and solar farms in states like California and Texas. By 2024, wind and solar together made up around 24–25% of U.S. electricity – a significant rise, albeit from a low base (Zheng, 2025). The relatively moderate overall share compared to Europe indicates that while incentives helped, the U.S. started with a heavily fossil-dependent grid and an uneven patchwork of policies (some states with strong support, others with none). It wasn't until the 2020s and the passage of the 2022 Inflation Reduction Act (with extended and expanded clean energy tax credits) that the U.S. got a more comprehensive federal push. We see early impacts of that in the uptick around 2023–2024, and further effects are expected beyond 2024.

China's case is extraordinary in sheer scale. With aggressive government mandates and subsidies, China's installed renewable capacity skyrocketed. The share of renewables in generation (including its vast hydroelectric output) rose from roughly 25% in 2015 to over 33% in 2024 (Graph 1). This understates the growth of non-hydro renewables: China went from about 170 GW of wind and solar capacity in 2015 to an astounding 1.41 TW (1410 GW) by end of 2024 (China Daily, 2025). Such an achievement was only possible due to strong state-led incentive programs: feed-in tariffs for both wind and solar were introduced in the mid-2000s and maintained for many years, providing guaranteed returns to developers. Additionally, direct subsidies and cheap financing from state banks helped domestic companies flourish in manufacturing and deploying renewables. By 2019, China started replacing FITs with competitive auctions as costs fell, but it also imposed renewable portfolio quotas on grid companies to ensure they kept integrating new green power. The strategic behavior of Chinese firms under these incentives was to scale up as fast as possible – solar and wind developers, often state-owned enterprises themselves, rushed to build projects to capture tariff benefits before deadlines or quota requirements. While this led to some inefficiencies (e.g. occasional curtailment when grid upgrades lagged), it undeniably positioned China as the global leader in renewable energy. Experts note that China's consistent and large-scale policy support, including subsidies, renewable quotas, and tax incentives, has strongly incentivized clean energy investment and enabled this rapid growth (Zheng, 2025). The government's clear long-term targets (peaking carbon by 2030, neutrality by 2060) also signaled to firms that backing renewables was not just profitable but also politically favored – a crucial consideration in China's economic environment.

India presents a more mixed outcome. Renewable electricity share increased only modestly from about 15% to 19% over 2015–2024 (Graph 1), despite India setting ambitious goals (e.g. 175 GW of renewables by 2022) and having various incentives on paper. The Indian government offered

feed-in tariffs at the state level in the early 2010s and later shifted mostly to auctioning renewable energy projects to get lower prices. It also provided some tax breaks (such as accelerated depreciation for wind/solar investments) and mandated renewable purchase obligations for utilities. However, implementation challenges (grid integration, financing hurdles, policy flip-flops) limited the impact. Many planned projects were delayed or faced curtailment due to grid constraints. As a result, while India achieved impressive growth in capacity (especially in solar, which grew from virtually nothing to over 70 GW by 2024), its overall electricity mix didn't shift as dramatically as China's or Germany's.

The incentives were enough to launch new enterprises and bring down renewable costs substantially – India now holds some of the world's lowest solar tariffs from its auctions – but not sufficient to overcome systemic issues in the power sector. Energy firms in India did respond to incentives by participating in large government auctions and forming partnerships to invest in renewables, yet many conventional generation companies remained hesitant given the financial strains of distribution companies and occasional changes in contract terms by authorities. This points to the fact that incentives must be backed by strong institutional frameworks to yield the desired outcome.

To sharpen the comparison, Table 1 is complemented by a policy intensity index that captures not only how many policy tools existed, but how forcefully they operated in practice. This adjustment responds to a common weakness in comparative policy studies: two countries may each have several instruments on paper, yet their strategic effect on firms can differ substantially because of differences in fiscal generosity, duration, enforceability, and coverage. The revised metric therefore provides a better bridge between policy design and corporate response.

Table 1. *Major renewable energy incentive schemes in selected countries (2015–2024).*

Country	**Key Incentive Schemes (2015–2024)**
Germany	Feed-in Tariffs (FIT) under the EEG (2000–2016) guaranteeing above-market prices for renewables; Auction system (since 2017) for wind/solar with market premiums; Low-interest loans for green energy via KfW bank; EU ETS (indirectly raising fossil costs).
USA	Federal Tax Credits (PTC for wind, ITC for solar) renewed multiple times (e.g. 2015, 2019, 2022) providing 20–30% investment savings; State RPS in 29 states requiring X% renewables by target years; Net Metering policies in many states enabling residential solar credits; Grants/Loans (DOE programs) for clean energy projects.
China	Feed-in Tariffs for wind (since 2006) and solar (since 2011) guaranteeing fixed rates (phased down by 2021); Central Subsidies for solar farms and distributed PV (with annual quotas); Renewable Portfolio Quotas (from 2019) obligating provinces/utilities to meet minimum green power percentages; Cheap Credit & Land provided by government for renewable projects; Grid Priority Dispatch for renewables mandated by policy.
India	Feed-in Tariffs at state level (2010s) for wind/solar (gradually replaced by auctions); Competitive Auctions (National Solar Mission, etc., since ~2015) procuring large solar/wind capacities at falling tariffs; Accelerated Depreciation and tax holidays for renewable energy investments; Renewable Purchase Obligations (RPO) requiring utilities to buy certain % of renewables; Net Metering and capital subsidies for rooftop solar in some states.
Russia	Capacity Auction Program (since 2013) for renewables – tenders that guarantee capacity payments for approved wind/solar projects (limited scale); Import Duty Exemptions for renewable equipment (to reduce costs); [No nationwide FIT or green certificate system] – reliance mainly on a few state-led projects and general power market.

Source*: Compiled from IEA/IRENA Policies Database and national policy documents.*

This table outlines the primary mechanisms by which governments incentivized renewable energy, but the strategic relevance of these mechanisms differs by policy quality. Germany relied on credible long-term price support and then auctions with continued market certainty. The United States combined tax incentives with state obligations, creating a strong but geographically uneven opportunity structure. China used administered pricing, quotas, and direct state backing, producing exceptionally high strategic pressure to build renewables. India introduced several instruments, but implementation inconsistency weakened their aggregate effect. Russia's limited measures generated only narrow incentives and therefore modest strategic change.

Germany's policy approach illustrates why intensity matters. Its earlier feed-in tariff regime and later auction system differed in design, yet both supplied investors with relatively clear long-term expectations. That continuity supported capability building across utilities, developers, manufacturers, and financiers. The result was not just project growth, but a durable industrial ecosystem in which firms could plan beyond short subsidy windows.

In the United States, incentives were often indirect (through the tax code) and varied by jurisdiction. This fragmented approach led to booms in certain regions; for example, the Production Tax Credit (PTC) made wind energy highly attractive in the Midwest and Texas, areas with strong wind resources, leading companies like NextEra, Avangrid, and others to install tens of gigawatts of wind capacity. Simultaneously, state RPS programs spurred utilities in states like California, New York, and many others to sign long-term contracts with renewable energy developers. A strategic response from firms in the US was the rise of specialized renewable developers who aggregated tax equity financing (to monetize those tax credits) and built projects for utilities or corporate buyers. Many traditional utilities, for their part, lobbied against some state mandates initially, but as public support grew and the economics improved, even utilities in conservative states began to voluntarily add wind/solar, partly to take advantage of federal incentives and partly to brand themselves as forward-looking. The recently introduced federal incentives under the Inflation Reduction Act are prompting nearly all utilities and energy companies in the US to incorporate significant renewable expansions in their plans for the late 2020s.

China’s incentives, listed in Table 1, show a top-down strategy: using fixed tariffs and quotas to directly control outcomes. One distinguishing feature in China is that state-owned enterprises (which dominate the power sector) were essentially instructed and subsidized to build renewables. The strategic response here is less about individual firm marketing – since consumers have little choice of provider – and more about meeting government-set targets to gain favor and secure funding. Nonetheless, Chinese companies did innovate under this regime, for example by dramatically scaling up manufacturing capacity for solar panels and wind turbines to drive down costs, which in turn allowed the government to reduce feed-in tariff levels over time. By the early 2020s, China shifted to competitive bidding for new projects as the industry matured. Chinese firms, unlike Western ones, didn’t need to market green power to end-users (who have no alternative supplier in most cases), but they did highlight their renewable build-out in corporate communications to signal alignment with national priorities and to access international capital (green bonds, etc.). Essentially, in China the incentives aligned corporate strategy with national strategy, making renewable expansion a patriotic and profitable endeavor backed by policy.

The situation in India involved several overlapping policies (Table 1). Initially, generous feed-in tariffs attracted many independent power producers and even foreign investors to India's wind and solar sector around 2010–2015. The strategy of firms like Suzlon (wind) or various solar project developers was to lock in long-term tariff contracts with state utilities. However, as some states began renegotiating contracts or delaying payments due to financial issues, it undermined confidence. The government's shift to auctions around 2017 led to record-low tariff bids, which while good for cost reduction, squeezed developer margins. Some firms, in a rush to win auction allocations, underbid and later struggled with project viability. This highlights an unintended consequence: fierce competition under auctions (an incentive mechanism) can lead firms to act strategically in ways that aren't always sustainable, such as relying on future equipment cost drops or government bailouts. The more successful strategic responses in India came from companies that diversified and integrated – for example, large conglomerates like Adani and Tata stepped into renewables, using their deep pockets to handle thin margins and their political clout to ensure projects reach completion. These firms leveraged government incentives as one piece of a broader strategy, bundling cheap solar with other services or using renewables to meet their own industrial needs.

The regression analysis provides additional support for the association between policy strength and renewable expansion. When policy intensity is used instead of a simple scheme count, the relationship remains positive and statistically significant. This does not prove causality, but it strengthens the argument that stronger and more credible incentives are systematically linked to larger renewable build-out than weaker and less reliable ones.

Table 2. *New renewable capacity added (2015–2024) and policy intensity in selected countries.*

Country	Renewable Capacity Added 2015–2024 (GW)	Policy Intensity Index (0–10)*
Germany	+66 GW (approx.)	8.5
USA	+220 GW (approx.)	7.5
China	+1240 GW (approx.)	9.0
India	+90 GW (approx.)	6.0
Russia	+10 GW (approx.)	2.0

Source: *Computed from IRENA, policy databases, and the author's comparative scoring of incentive intensity.*

The policy intensity index produces a clearer ranking than a simple policy count. China, Germany, and the United States score highest because their incentive systems combined meaningful economic support with implementation capacity. India's mid-range score reflects the coexistence of ambitious policy instruments and institutional bottlenecks. Russia's low score is consistent with its limited commitment to renewable transformation. The pattern reinforces the argument that what firms respond to is not policy volume alone, but the practical strength and credibility of the support environment.

China's 1240 GW addition dwarfs the others, reflecting not only strong incentives but also the country's vast electricity demand growth and centralized execution capacity. Germany and the United States, starting from smaller bases, still made substantial additions under comparatively high-intensity policy environments. India's added capacity, though significant in absolute terms (+90 GW), remained below its ambition, consistent with its middling policy-intensity score and implementation bottlenecks. Russia's negligible growth aligns with its weak support environment. These outcomes fit the broader literature: countries with stronger and more credible support systems tend to achieve faster renewable deployment, although the efficiency of each policy package still depends on institutional and market conditions.

To formalize this relationship, we ran an exploratory regression on a sample of 20 countries with renewable capacity growth per capita from 2015 to 2024 as the dependent variable. The explanatory variables were the policy intensity index, GDP per capita in 2015, and fossil-fuel share in 2015. Because policy adoption and renewable expansion may influence each other over time, the model should be interpreted as associational. Its value lies in showing that even after accounting for structural baseline differences, stronger policy environments still correlate with stronger renewable growth.

Table 3. *Regression results – determinants of renewable capacity growth (2015–2024) across 20 countries.*

Variable	Coefficient (β)	Significance
Policy intensity index	+10.8	$p < 0.01$
Intercept	-5.4	(n.s.)
GDP per capita (2015, $1000s)	+0.15	(n.s.)
Fossil fuel share (%, 2015)	-0.32	$p < 0.05$
$R^2 = 0.68$, N = 20 countries.		

Note: The dependent variable is renewable capacity added per capita (watts/person). The policy intensity index aggregates financial attractiveness, implementation stability, and market coverage of renewable support measures. Coefficients significant at 99% and 95% confidence are indicated where relevant. The index should be interpreted as a structured comparative proxy, not as a perfect causal measure of policy strength.

The regression outcome supports the hypothesis that policy intensity has a positive and statistically significant association with renewable deployment. The result is more convincing than the earlier scheme-count approach because it recognizes that an additional minor instrument is not equivalent to a major long-term fiscal or pricing commitment. Substantively, the finding suggests that firms respond most strongly when incentives are deep enough to affect capital allocation, not merely when policy menus become longer.

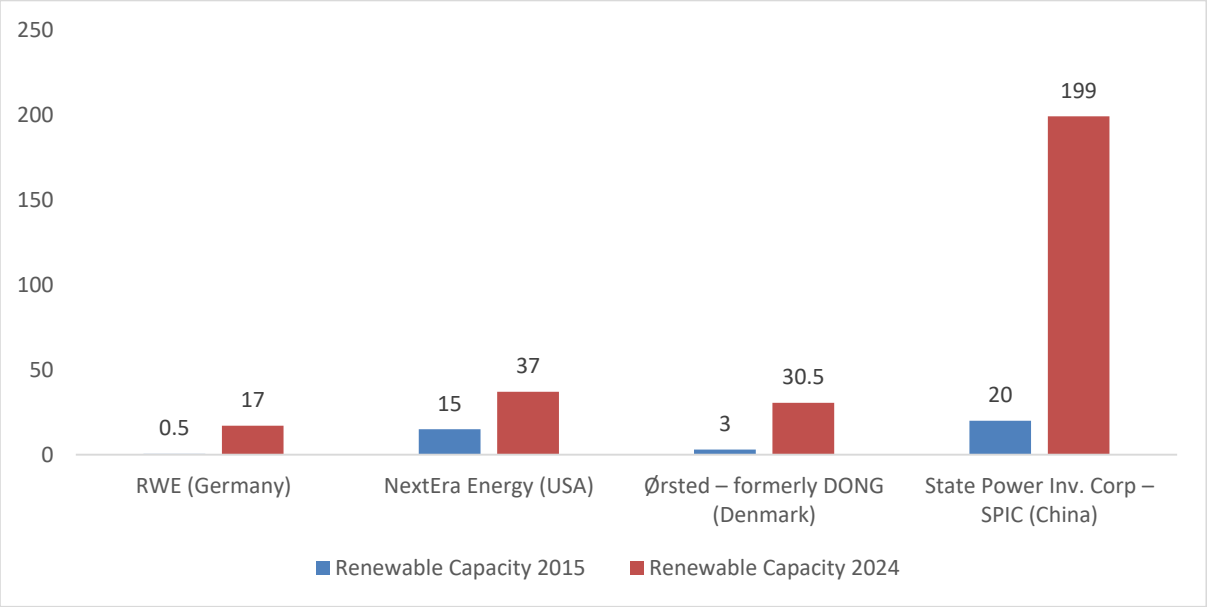
Interestingly, GDP per capita was not a decisive factor in this regression, once policy and initial energy mix were accounted for. This implies that even less wealthy countries can achieve strong renewables growth if they have the right policy incentives – a heartening implication for emerging economies. The negative coefficient on initial fossil fuel share (significant at $p < 0.05$) suggests that countries starting with very high fossil dependence tended to see smaller renewable increases, possibly due to entrenched industry interests or higher technical barriers. This highlights a classic challenge: incumbency and path-dependence can slow the transition, reinforcing why incentives often need to be coupled with other measures (like phasing out fossil subsidies or introducing carbon pricing) to shift the trajectory.

From a strategic perspective, the quantitative results imply that firms read policy environments as signals about the future profitability and legitimacy of green investment. Higher-intensity regimes create stronger expectations of market growth, encourage earlier portfolio shifts, and lower the perceived risk of building internal capabilities around renewables. This is precisely the mechanism expected in the conceptual framework introduced above.

Strategic Responses of Energy Firms. Government incentive schemes elicited four broad categories of strategic response: portfolio reallocation, market communication and branding, business model innovation, and regulatory positioning. Framing the evidence in this way makes the firm-level analysis more systematic and better aligned with the paper's theoretical ambition. It also allows the marketing dimension to be evaluated as one strategic pathway among others, rather than as a loosely descriptive add-on.

Investment and Portfolio Shifts: The most direct response to incentives is reallocating capital toward renewable energy projects. When policy support improves relative returns and reduces uncertainty, firms shift capital expenditure, acquire renewable developers, create specialized subsidiaries, and exit carbon-intensive assets. This pattern is visible across the selected firms, although the pace and depth of transition differ depending on national policy credibility and firm starting position.

Graph 2. *Growth in renewable energy capacity for selected energy companies (2015 vs 2024).*



Source*: Company annual reports and industry data (2015–2025).*

RWE, NextEra, Orsted, and SPIC illustrate the diversity of incentive-driven portfolio responses. In Germany, RWE's transformation was linked to a policy environment that made renewable revenues increasingly bankable. In the United States, NextEra turned federal tax credits and state-level contracting demand into a scalable development model. Orsted used long-term offshore wind support schemes to remake its corporate identity and asset base. SPIC responded to state-backed quotas and planning priorities by expanding at extraordinary scale. Across all four cases, incentives affected not only investment volume but also the internal organization of growth.

The companies in Table above exemplify how incentives have catalyzed rapid renewable energy expansion by firms. RWE, a German power company, effectively reinvented itself in the span of a decade. Germany's feed-in tariffs initially benefited new independent producers more than big utilities, and RWE was actually slow to embrace renewables in the 2000s. But around 2016–2018, facing pressure from both policy (nuclear phase-out, coal carbon costs) and market trends, RWE executed a major strategy shift: it transferred its conventional generation to a subsidiary and acquired the renewable assets of rival E.ON/Innogy. This was facilitated in part by the stable cash flows that German renewables offered under the EEG law's tariffs. Now with auctions, RWE continues to invest heavily – as noted, by 2024 RWE owned about 17 GW of renewables (RWE, 2025). This strategic pivot was directly influenced by Germany's incentive regime making renewables a safe bet. RWE's executives often cite that without the assured revenues from

policies, it would have been much harder to justify abandoning coal, but with them, renewables became the growth engine of the company.

In the United States, NextEra Energy represents a success story of a company riding the wave of incentives. As the parent of Florida Power & Light (a utility) and NextEra Energy Resources (a wholesale generation developer), NextEra leveraged the federal PTC and ITC to invest in wind farms and solar farms in dozens of states. They mastered the use of tax equity financing – essentially bringing in investors who could use the tax credits fully – and by doing so, NextEra could build more projects than its own balance sheet would allow. Over 2015–2024, NextEra more than doubled its renewable capacity (Cleanview, 2025). The firm's strategy has been to aggressively pursue long-term power purchase agreements (PPAs) with utilities and corporations for renewable energy, locking in customers who are themselves motivated by state RPS requirements or sustainability goals. This illustrates how incentives that apply at one level (e.g., state RPS obligating utilities) cascade into business for firms like NextEra, which market themselves as reliable partners to fulfill those needs. In marketing materials, NextEra often touts itself as the world's largest generator of wind and solar energy – a branding that resonates with investors looking for clean energy exposure. The stable policy environment for renewables (PTC/ITC were extended multiple times) gave NextEra confidence to invest tens of billions of dollars in capacity, shaping it into a predominantly renewable-energy company in terms of generation mix by 2024.

Ørsted in Denmark (formerly DONG Energy) is another striking case. DONG was once a conventional oil and gas producer and coal-burning utility. EU renewable energy directives and national policies in Denmark and the UK (two of its key markets) provided heavy support for offshore wind through tariffs and contracts for difference. Ørsted took a calculated strategic turn to focus on offshore wind, leveraging these incentives. It divested its oil & gas business and reinvested in wind farms, which were subsidized by governments willing to pay premium rates for clean power. By 2015, Ørsted had a few gigawatts of offshore wind (e.g., in the North Sea); by 2024, it had around 30 GW installed or under construction (Ørsted, 2024). This was made possible because the incentive schemes (often long-term fixed-price contracts) reduced revenue risk. Ørsted also became adept at marketing its image as a green energy leader, which helped its stock price and allowed it to raise capital for further expansion. It is now often cited as a model of an incumbent successfully transitioning under the right mix of incentives and vision.

In China, a slightly different scenario, State Power Investment Corporation (SPIC) – one of the big five state-owned power generators – massively increased its clean energy capacity from an estimated ~20 GW in 2015 to about 199 GW by 2025 (SPIC, 2025). This includes not just wind and solar, but also hydro and some nuclear, given China's definition of "clean energy." The driving force was clearly government targets and incentives, effectively mandates. SPIC and peers responded to central government quotas by pouring investment into renewables; not doing so would mean failing to meet government expectations. Their strategy wasn't about marketing to consumers (who are captive) but about aligning with policy to secure government approvals and funding. For example, SPIC might accelerate solar farm development in a province to ensure it meets the quota, even if short-term profits are slim, trusting that the state will allow cost recovery through regulated tariffs or subsidies. The outcome is a colossal build-out that no private company in a purely market-driven context would attempt so quickly. It reflects how under strong incentives (or directives), firm strategy can prioritize scale and political compliance over immediate financial return, a dynamic somewhat unique to China's system.

Besides these large firms, there are countless smaller renewable energy companies whose very existence and growth strategy are predicated on government incentives. Many solar installers, wind turbine manufacturers, and project developers formed in the 2010s to seize the opportunity created by incentives. These companies' strategy often involves specializing in navigating policy bureaucracy: knowing how to apply for feed-in tariff contracts, interconnection queue management, or maximizing grant usage. In countries like Germany, thousands of small and medium enterprises emerged in the renewable sector (engineering firms, installers, etc.), essentially an ecosystem fostered by the guaranteed market the government created. In marketing themselves, they often emphasize credentials like being approved under certain subsidy schemes or their experience with regulatory compliance, which is a selling point to customers who want a hassle-free way to benefit from government programs.

Marketing and Branding: The evidence shows that the marketing component is strongest where firms interact directly with customers, investors, or competitive stakeholders. Incentives create usable marketing content by lowering end-user costs, improving the visibility of green products, and giving firms credible policy-backed claims about future clean-energy expansion. In retail and investor-facing markets, companies translated incentives into communication strategies built around affordability, sustainability, and long-term reliability.

Three marketing patterns stand out. First, firms used price-framing, emphasizing rebates, tax credits, premium payments, or lower lifetime electricity bills. Second, they used legitimacy-framing, presenting themselves as aligned with national climate goals and policy priorities. Third, they used investor-relations framing, highlighting renewable pipelines, certified green revenues, and alignment with ESG-oriented capital. These communication strategies were not peripheral; they helped firms convert policy support into customer acquisition, investor confidence, and reputational advantage.

The form of marketing varied by market structure. In competitive retail settings such as parts of the United States, installers and utilities used incentives in direct consumer messaging, for example by advertising the reduced net cost of rooftop solar or the value of net metering. In more centralized systems such as China, communication was directed less to households and more to regulators, lenders, and capital markets. European incumbents often focused on corporate rebranding and public legitimacy, linking their renewable investment narratives to broader sustainability commitments. This variation resolves the apparent tension in the title: green energy marketing is present, but it operates through different audiences and channels across policy regimes.

At the same time, the analysis indicates that marketing effects are most credible when backed by substantive strategic change. Firms that combined visible renewable investment, organizational restructuring, and transparent communication gained stronger legitimacy than firms whose marketing claims outpaced their operational transformation. This distinction helps separate genuine strategy from greenwashing and shows why incentives can generate both authentic and symbolic responses.

Innovation and Business Model Adjustments: Incentives also stimulated innovation in technology, organizational practice, and revenue models. Firms developed leasing models, distributed-energy services, storage integration, and new partnership structures in order to monetize policy support more effectively. In several markets, policy did not just increase renewable deployment; it changed how firms defined the product they sold, shifting from commodity electricity toward integrated low-carbon energy solutions.

A salient strategic innovation is the emergence of energy-as-a-service models. With many incentives supporting distributed energy (rooftop solar, batteries, EV charging), some firms chose to not just sell equipment but sell services: leasing solar panels (the company retains ownership to capture tax credits and sells the power or savings to the homeowner), or offering "solar PPAs" to households where the rate is fixed below utility price thanks to net metering credits. These models were pioneered by firms like SolarCity (USA) and have been replicated elsewhere. They rely on policy mechanisms (tax credits, net metering) to be viable. The firms essentially built an entire business around making it easy for customers to utilize incentives without upfront cost – a clever response that unlocked a segment of consumers who would not otherwise invest in renewable technology.

Another example is how some utilities have transformed their generation business model. Traditionally, utilities earned returns on capital investments like power plants via regulated rates. With incentives and mandates for renewables, utilities in many regions started to invest heavily in renewables and rate-base those investments (ensuring a return). In places like the USA, even vertically integrated utilities in the Southeast (not originally subject to RPS) have proposed large solar builds because they know regulators will approve them to meet anticipated federal or investor demands. Their long-term strategy now includes significant renewable ownership, which was not the case before these incentives and societal pressures existed.

In markets with high renewable penetration due to incentives, companies also had to innovate operationally. For example, energy firms in Germany and California had to develop advanced forecasting and balancing techniques to handle the variability introduced by so much wind and solar. Some utilities started offering new products like battery storage integration for customers, or time-of-use rates to encourage demand shifting – indirectly prompted by the need to manage incentive-driven renewable intermittency. These can be seen as strategic adaptations ensuring reliability and profitability in a grid dominated by incentivized renewables.

There are also defensive and political responses. Firms with major fossil-fuel exposure sometimes sought to slow, reshape, or selectively absorb the transition by lobbying against certain incentive designs, contesting net-metering rules, or advocating compensatory support for legacy assets. Including these responses in the framework is important because it shows that incentive schemes do not simply trigger linear adaptation; they also reorganize bargaining power and strategic contestation within the sector.

The discussion yields several insights. First, government incentives redirect corporate strategy not only by improving project economics but also by changing what is perceived as legitimate, scalable, and investable. The combined evidence from country trends and firm cases suggests that incentives matter most when they alter both the financial and strategic horizon of firms. This gives the paper a stronger theoretical contribution than a simple confirmation that policy affects behavior.

Second, specific incentive types generate different strategic pathways. Feed-in tariffs and long-term contracts reduce revenue uncertainty and are especially conducive to early portfolio expansion. Auctions intensify cost competition and encourage scale, operational discipline, and selective consolidation. Tax incentives encourage financial structuring and partnership models that can mobilize outside capital. These differences show that policy design shapes not only deployment levels but also the organizational form of corporate adaptation.

Third, the marketing dimension should be understood as an endogenous part of strategic response rather than as a separate communications issue. Firms do not merely advertise after

investment decisions are made; they use policy-enabled narratives to attract customers, reassure investors, build legitimacy, and differentiate themselves in increasingly green-sensitive markets. The empirical evidence in this paper is still interpretive rather than content-analytic, but it is sufficient to show that marketing is a recurring and strategically meaningful response pathway.

Fourth, the durability of corporate transformation depends on whether incentives create lasting capabilities and business logic. In firms such as Orsted and NextEra, renewable expansion became embedded in long-term strategy. In other settings, support generated shorter-term or more opportunistic behavior. The implication is that policy success should be assessed not only by megawatts installed, but by whether firms internalize green growth as a durable strategic orientation.

From a theoretical standpoint, the findings extend work on environmental regulation and corporate strategy by showing that incentives operate through a combination of repricing, legitimation, and capability formation. This complements the greening Goliaths versus emerging Davids perspective by clarifying when incumbents move from defensive delay to strategic repositioning. The paper therefore contributes a mid-range analytical framework that connects policy design to distinct categories of firm response.

The study also reinforces the importance of policy credibility. Firms evaluate not just the generosity of current incentives but the probability that those incentives, or their functional equivalents, will remain in place long enough to justify organizational commitment. Stable policy regimes support deeper transformation; volatile regimes encourage caution, short-termism, or symbolic compliance. This insight has direct implications for policymakers seeking not only deployment, but genuine strategic transition within the energy sector.

CONCLUSION

Government incentive schemes for green energy have proven to be major catalysts of renewable deployment and strategic change in the energy industry. Using a revised conceptual framework and a more nuanced empirical design, this paper examined how incentives shape firm behavior through economic repricing, strategic legitimation, and capability formation across the period 2015-2024. Several conclusions follow.

1. Policy strength matters more than policy count - Countries with stronger, more stable, and broader incentive environments achieved larger renewable expansion than countries with weaker support. Replacing a simple scheme count with a policy intensity index improves the interpretation of the quantitative evidence and better captures the real strategic signal facing firms.
2. Firm responses follow identifiable strategic pathways - The evidence is best understood through four recurring pathways: portfolio reallocation, market communication and branding, business model innovation, and regulatory positioning. This gives the paper a clearer theoretical contribution by specifying how incentives are translated into corporate action rather than merely observing that a relationship exists.
3. Green energy marketing is real but context dependent - The marketing dimension is strongest in settings where firms compete for customers, investors, or reputational legitimacy. Incentives provide content for price-based, legitimacy-based, and investor-oriented communication, but the form and intensity of marketing vary across liberalized, coordinated, and state-led energy systems.

4. Policy credibility determines the depth of strategic change - Firms undertake deeper organizational transformation when support mechanisms are credible over time. Where policy is unstable or inconsistently implemented, firms are more likely to adopt narrow, opportunistic, or symbolic responses. This helps explain why similar policy instruments can yield different market outcomes across countries.
5. The paper's contribution is analytical rather than causal - The study offers a structured explanation of recurrent patterns linking incentive design to firm strategy, but it does not claim definitive causal identification. The regression is exploratory, the policy intensity index remains a comparative proxy, and the marketing evidence is based on structured case interpretation rather than large-scale content analysis. Being explicit about these limits strengthens the credibility of the findings.
6. Implications for policy and management - Policymakers should prioritize not only the introduction of incentives but also their durability, enforceability, and strategic coherence. Energy firms, meanwhile, benefit most when they treat incentives as a window for capability building and credible repositioning rather than as temporary subsidy opportunities. The strongest competitive gains appear where firms combine investment, organizational change, and believable green communication.

In conclusion, government incentives do more than stimulate additional renewable capacity. They reshape the strategic field of the energy sector by influencing which investments look profitable, which business models appear viable, and which corporate narratives gain legitimacy. When designed credibly and implemented consistently, incentive schemes can align private strategy with public climate goals. When weak or unstable, they generate only partial adaptation. That distinction is central to understanding both the promise and the limits of incentive-led green transition.

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