Contracts for Difference for Flexible and Affordable Clean Power

India's Pilot and Path to Scale

Rashi Singh, Disha Agarwal, and Vishal Tripathi

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Executive summary

Over the last decade, countries have attracted investment in renewable energy (RE) through feed-in-tariffs, premiums and competitive auctions, resulting in long-term assured offtake contracts. However, with the rapid ingress of solar and wind across grids and changing electricity demand patterns, these routes are no longer sufficient to ensure an affordable supply mix. Market-linked revenue mechanisms are becoming important. The International Energy Agency (IEA) estimates that merchant capacities, corporate contracts, and utility contracts could account for nearly 30 per cent of global RE growth until 2030.

Issue Brief

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Our analysis suggests that India's first **Contract-for-Difference (CfD) pilot tender, launched in April 2026, can help de-risk investments in merchant renewable energy and storage and enable utilities to procure clean power during evening peak-demand hours.** CfD, a financial contract that guarantees a generator an agreed strike price, helps manage this transition by giving clean-power developers partial revenue certainty while still exposing them to market prices, dispatch signals, and buyer preferences. It will also help increase volumes in the wholesale power market, which is essential for cost-effective RE integration.

To scale market-based transactions, India must strengthen price discovery for short-term procurement, expand buyer participation in wholesale markets, develop financial products to manage risk for merchant power developers, and rethink market design to reward capacities for being available and flexible. India's pilot holds relevance for other developing power markets, where renewable energy procurement is still dominated by long-term bilateral contracts, wholesale markets remain shallow, and governments are seeking ways to procure clean, flexible power without assuming open-ended fiscal liabilities.

1. Introduction

Power systems across the world are entering a new phase of transition. The challenge has shifted from adding more renewable energy capacity to ensuring clean power is available at reasonable costs when the system needs it most (IEA 2024). This is particularly relevant for developing and emerging and developing economies (EMDEs) experiencing rapid electrification, industrial growth, rising cooling demand, and increasing variable renewable energy output, all of which require highly flexible power systems (IEA 2025a; IEA 2025b). Countries are now being forced to rethink electricity procurement frameworks that were primarily designed for conventional firm power generators, such as coal and nuclear, or must-run solar and wind.

India offers an important case study in this transition. Its peak power demand exceeded a record 270 GW in May 2026, 8 per cent higher than the previous peak (according to Ministry of Power data). In many of its large states, the peak power demand has grown faster than total annual energy demand, according to the Bureau of Energy Efficiency (BEE)'s analysis of the Central Electricity Authority (CEA)'s data (Bureau of Energy Efficiency 2024). The challenge is the widening gap between this growing peak and average demand, compounded by intra-day and seasonal variations in RE generation. Firm or inflexible capacity built to meet short periods of high demand sits underutilised for most of the year, raising system costs and, ultimately, consumer tariffs.

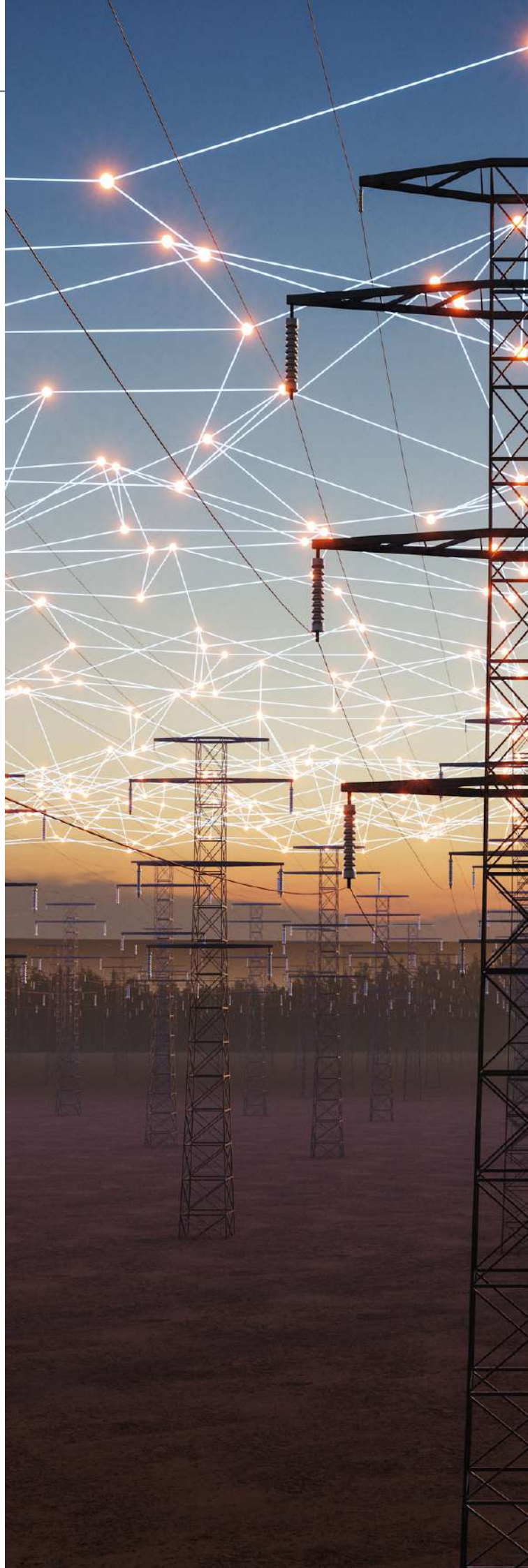


Image: iStock

In the last two decades, India has quadrupled its installed power generation capacity to fuel a rapidly growing economy (CEA 2025; Ministry of Power 2025). This expansion was enabled largely through long-term power purchase agreements (PPAs), which provided assured payments and reduced investment risk for coal-based plants. In the renewables sector, competitive auctions with 25-year PPAs led to sharp tariff declines and rapid capacity additions (Kanika Chawla et al. 2019). However, while this model was effective for scaling supply, it is less suited to today's dynamic demand patterns. Long-term PPAs lock in generation capacity for decades regardless of when electricity is actually needed. They are designed to meet expected baseload demand, not respond flexibly to short-term peaks or increasing uncertainty in consumption patterns.

This is where the Government of India's push towards Contracts-for-Difference (CfDs) for RE and storage in March 2026 becomes significant (MNRE 2026). Complementing traditional long-term PPAs, India's CfD design can channel flexible, demand-responsive clean power into wholesale markets. It will provide revenue visibility for clean energy generators in the absence of assured offtake contracts, while enabling utilities and corporates to buy power at competitive, market-reflective prices on power exchange platforms.

Several mature power markets, including the United Kingdom (UK) and parts of Europe, adopted CfDs as instruments to attract investment in renewables starting in 2013-2014, when the technology was nascent, and costs were high (Oxford Institute for Energy Studies 2024). This issue brief examines the innovative design and prospects of India's first CfD pilot. It also draws lessons for other evolving power markets facing similar constraints, such as limited short-term procurement avenues, heavy reliance on long-term contracts, and the need to scale clean, flexible power without open-ended fiscal exposure.

> The next phase of the energy transition requires clean power to be available not only at scale, but when the system needs it most.

2. What is a Contract-for-Difference (CfD)?

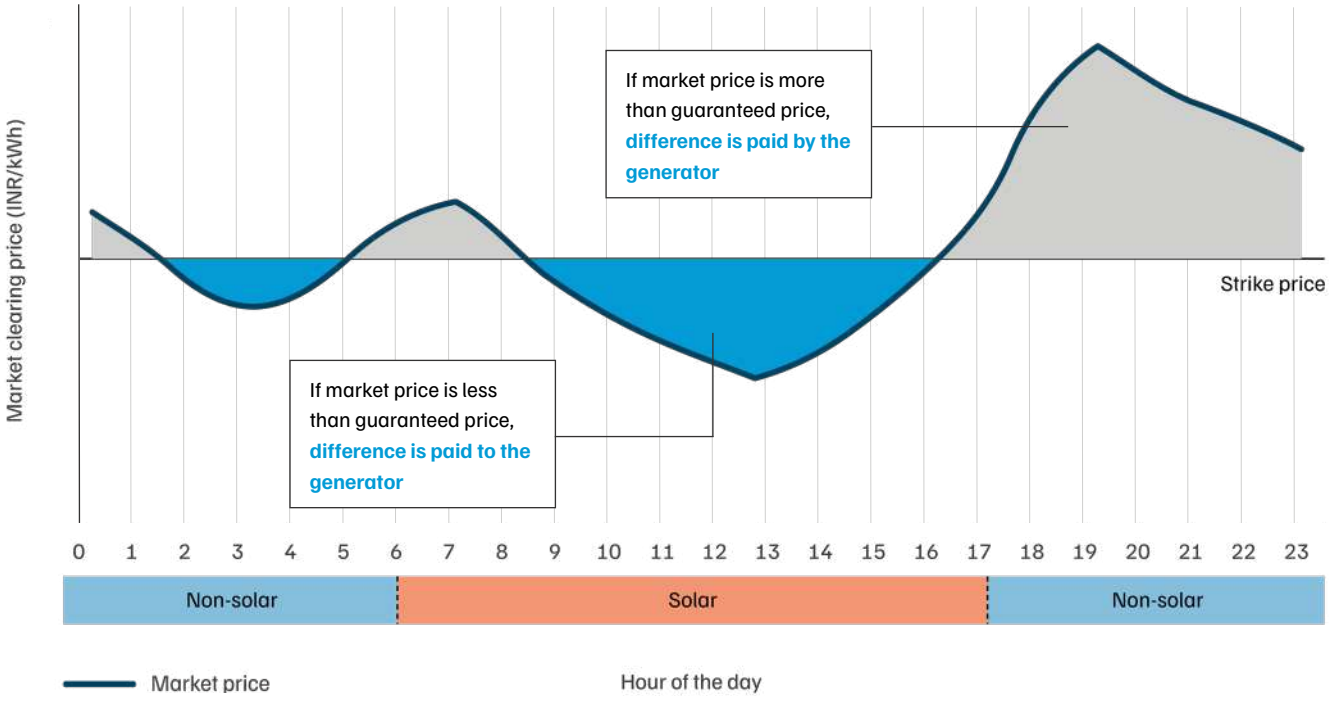
A CfD is a financial instrument designed to manage the risk of revenue uncertainty for generators selling electricity exclusively on market platforms (called merchant plants), where electricity prices fluctuate based on real-time demand and supply.

In advanced power markets, CfDs provide revenue stability by guaranteeing a fixed benchmark, known as the strike price (SP), which is typically determined through competitive bidding and reflects the generator's cost to supply. The contract then settles the difference between this strike price and the prevailing market or reference price.

In a two-way CfD (Figure 1):

- If the reference price < SP, the generator receives a payment to cover the shortfall.
- If the reference price > SP, the generator pays back the excess revenue.

Figure 1. How do two-sided Contracts-for-Difference (CfDs) work?



Source: Authors' analysis

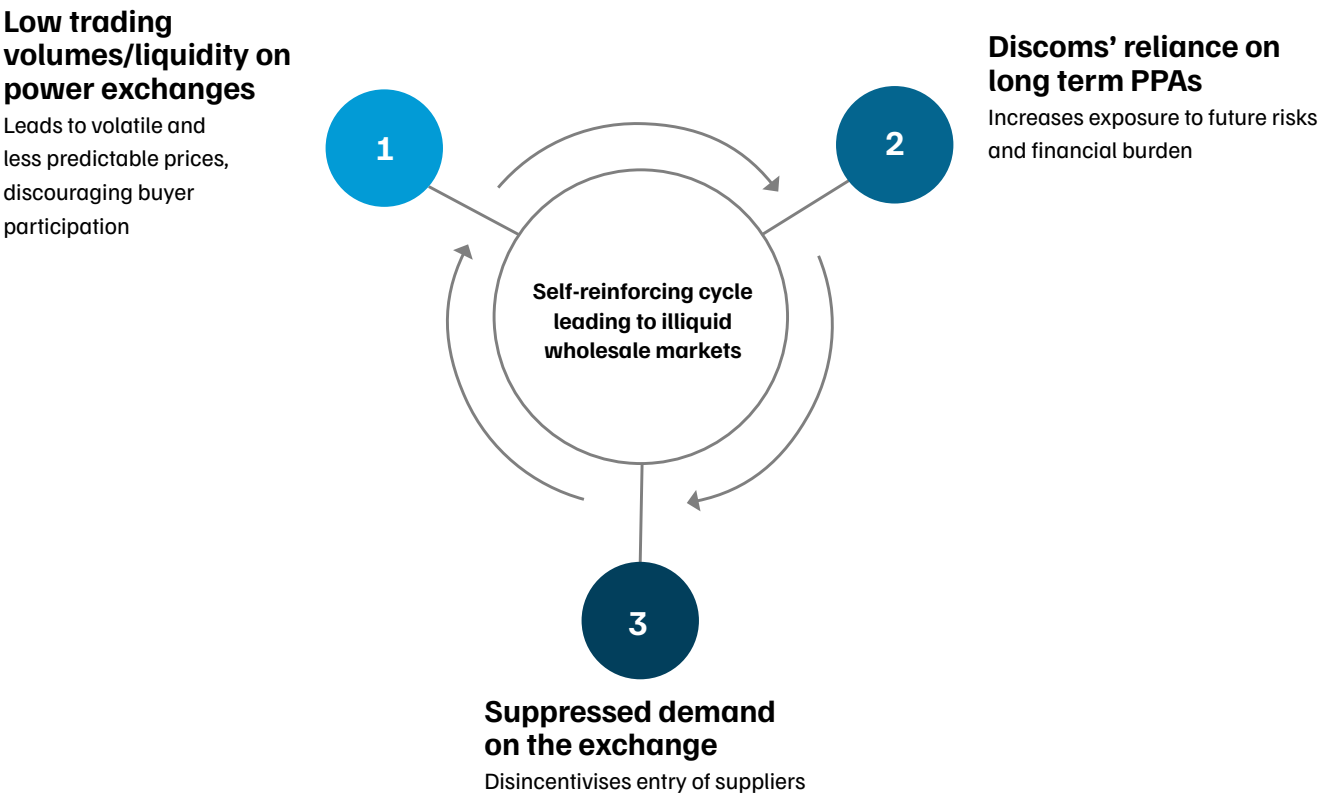
This structure protects generators from low-price periods while preventing windfall gains during high-price periods. In countries such as the UK and Germany, where CfDs are used as part of renewable energy market design, payments are typically managed through government-owned or designated counterparties and financial settlement mechanisms (Department for Energy Security and Net Zero 2025; Simon Malleret et al. 2024).

However, unlike mature European markets, where CfDs are layered on relatively liquid wholesale and forward markets, India is testing the instrument in a market where participation in wholesale markets remains limited and long-term PPAs dominate. This makes the pilot important not only as a renewable energy support mechanism but also as a market-building intervention.

3. Why do CfDs matter for renewable energy and storage in India?

India's wholesale electricity markets remain thin. Despite nearly 17 years of formal operation, power exchanges—platforms where electricity is bought and sold for short-term horizons—account for only about seven per cent of total electricity generation, functioning largely as a last resort for buyers (CERC 2025a). The primary cause is the dominance of legacy long-term PPAs, which lock most distribution companies into fixed procurement arrangements. This creates a self-reinforcing cycle: low trading volumes lead to price volatility, which discourages buyers such as distribution utilities from participating. Weak demand, in turn, deters suppliers from entering the market, further constraining market depth (Figure 2).

Figure 2. The self-reinforcing cycle of why India's power exchanges remain small and underused



Source: Authors' analysis

Renewable energy and storage are well-placed to break this cycle for two key reasons:

1. They can be built within one to two years, far quicker than conventional generation. Over 40 GW of renewable energy capacity is currently awaiting buyers, while a large pipeline of applications has been submitted for non-solar hour transmission connectivity under the General Network Access (GNA) regulations (CERC 2025b).
2. They can help India build a lower-cost electricity system. A study by the Council on Energy, Environment and Water (CEEW) shows that, even after accounting for additional transmission and flexibility requirements, a high renewable energy pathway can reliably serve India's rising demand and save ~ INR 42,000 crore (~USD 4.4 billion) in 2030 (Disha Agarwal et al. 2025).

However, merchant renewable energy plants face risks operating in illiquid markets. These risks are difficult to quantify and, in many cases, still poorly understood. Without instruments to discover and manage these risks, investment in market-based capacity remains constrained and wholesale market liquidity remains weak. This is the structural gap that India's pilot CfD is designed to fill: by stabilising revenues sufficiently to attract investment while preserving enough market exposure to drive competitive behaviour.

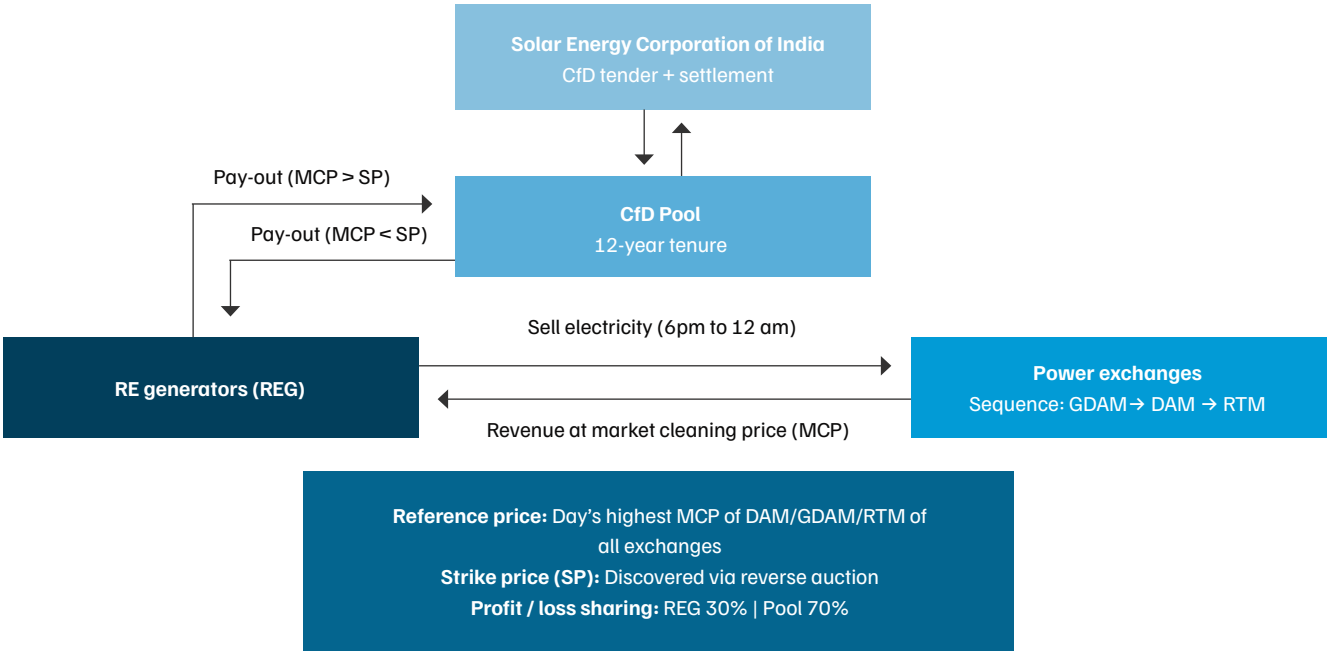
In this sense, CfDs can help power markets move beyond the traditional choice between long-term contracts and full merchant risk. They can provide enough revenue visibility to make market-linked renewable energy and storage bankable, while still exposing generators to wholesale market prices. For evolving power markets, this creates a practical transition path from contracting capacity for decades to procuring clean power more flexibly, in the shorter term.

4. What makes India's first CfD pilot significant?

In March 2026, India's Ministry of New and Renewable Energy (MNRE) approved a pilot CfD scheme for 500 MW of renewable energy capacity, making India one of the first developing economies to formally adopt a CfD instrument for clean power. The Solar Energy Corporation of India (SECI), the nodal implementation agency, has since issued a tender that gives concrete shape to the framework (SECI 2026).

The pilot is built around a two-way, financially settled CfD contract model. SECI, as a counterparty, manages a dedicated stabilisation fund, seeded with INR 76 crore (approximately USD 8 million) , to pay developers when market prices fall below the strike price. The fund gets replenished when market prices exceed the strike price (Figure 3). The design serves three broad objectives: (i) speeding up the deployment and offtake of renewable energy and battery storage; (ii) facilitating clean energy availability during critical evening peak-demand (non-solar) hours; and (iii) stabilising market prices to attract a wider set of buyers and sellers.

Figure 3. India's CfD pilot mechanism flow



CEEW analysis based on MNRE's approved CfD Guidelines (OM No. 238/3/2026-P AND RA, March 2026) and SECI's Request for Selection (RfS) for the CfD pilot.

Note: GDAM is the Green Day-ahead Market, where renewable power is traded a day in advance; DAM is the Day-ahead Market for next-day electricity delivery; RTM is the Real-time Market, enabling near-delivery trading to manage imbalances; REC stands for Renewable Energy Certificates, tradable instruments representing clean power; and REIA refers to the Renewable Energy Implementing Agency, SECI, which procures power on behalf of buyers and distribution utilities.

The Government of India has already signalled the need for such market-linked instruments. The Ministry of Power's Report of the Group on Development of Electricity Market in India and the *Draft National Electricity Policy 2026* both call for instruments that increase efficiency in power procurement (Ministry of Power 2023, Ministry of Power 2026).

> For developing power markets, India's CfD pilot can shows how revenue certainty and market exposure can be balanced to accelerate RE and storage deployment.

5. What are the key design features of the CfD pilot?

- **From capacity-based procurement to time-of-day energy procurement**

  Developers can configure projects using any combination of solar, wind, and storage, including pumped-storage hydro plants, to deliver dispatchable power to meet system requirements. To receive CfD support, developers must place sell bids during any three hours between 6 pm and midnight, when electricity demand is high, and exchange prices are at their peak. They can also source up to 25 per cent of energy from the green day-ahead market and other bilateral agreements when their own generation falls short. This marks a shift in procurement philosophy: the system is no longer just paying for capacity, but also for reliable supply when it is most needed.

- **Assessing investor appetite for shorter-term contracts**

  By partially stabilising revenues while retaining meaningful market exposure, the pilot will help policymakers understand how investors price risk and structure financing for clean energy projects operating under short-term contracts. These signals on financing conditions, pricing expectations, and commercial viability will be critical for future projects.

- **From risk transfer to risk sharing**

  The profit-loss sharing arrangement is the pilot's most distinctive feature. Developers retain a pre-decided percentage exposure to both upside and downside risks. For instance, in a 70:30 sharing ratio, when market prices fall below the strike price,

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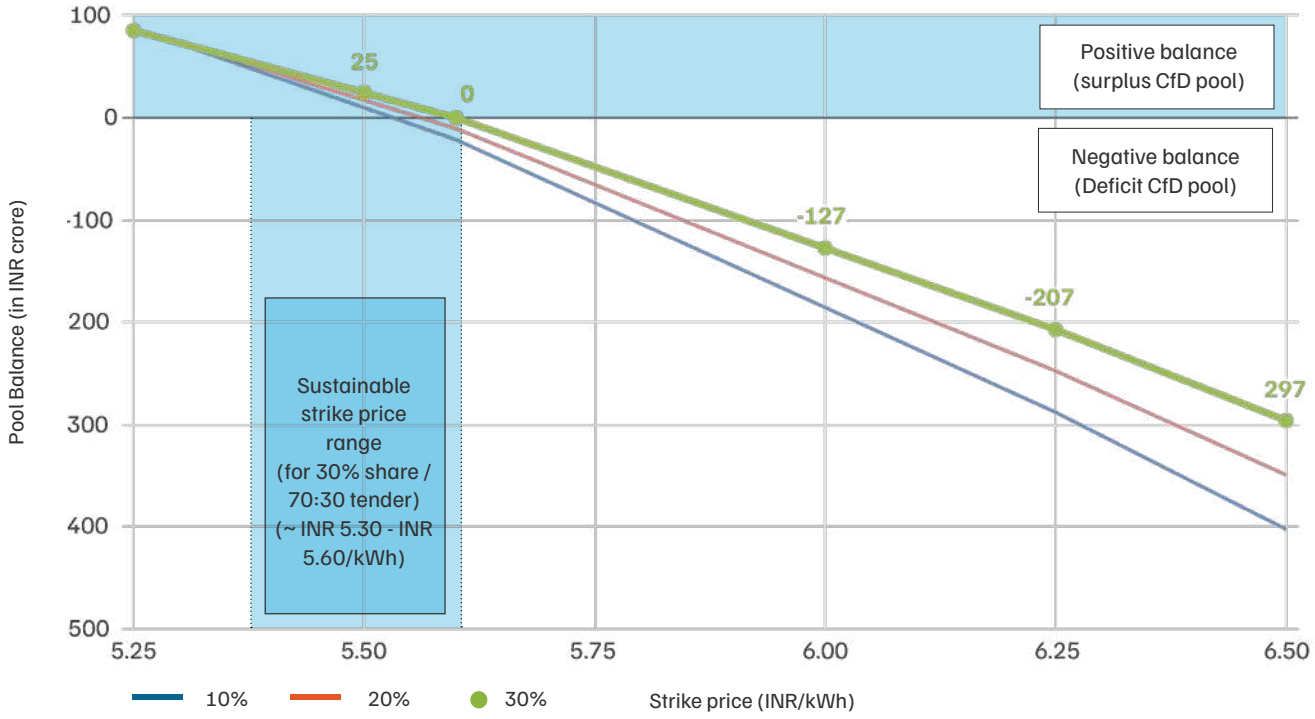
the CfD pool compensates for 70 per cent of the shortfall, and when prices exceed the strike price, developers return 70 per cent of the gains to the pool. This structure partially stabilises revenue without fully insulating developers from market signals, preserving the incentive while limiting fiscal liabilities for the pool.

At the same time, the adequacy of the CfD pool is highly sensitive to strike prices. Our analysis shows that the pool reaches break-even at a strike price of approximately INR 5.5–5.6/kWh (or 5.76–5.86 cents/kWh) under the 70:30 profit-loss sharing ratio (Figure 4).

Figure 4. The CfD pool remains financially sustainable at strike prices of approximately INR 5.5–5.6/kWh



Source: Authors' analysis

Note: Analysis considers daily RE supply of 1500 MWh, Indian Energy Exchange (IEX) DAM prices for 6 pm and 12 am for FY23 to FY26, and incorporates potential cannibalisation effects over a 12-year horizon

- **Infusing supply-side liquidity in power exchanges**

  Our analysis suggests that the CfD pilot's immediate impact on market liquidity may be limited. A daily supply of 1 GWh could increase DAM liquidity by only about 1 per cent and GDAM liquidity by 2.5–5 per cent, depending on monthly injection patterns.

  However, its greater value lies in the shift it could trigger among renewable energy developers that are traditionally reliant on long-term PPAs. By requiring them to participate in power exchanges, the pilot can help build market-facing capabilities and confidence in merchant operations, gradually supporting deeper market participation.

6. How can CfDs improve market efficiency in India?

The pilot establishes a strong foundation for catalysing innovation. However, five design challenges will determine whether CfDs can fulfil their potential to deepen wholesale markets, de-risk clean energy investment, and support cost-effective peak power procurement. These challenges are not unique to India. They reflect the broader design frontier for CfDs in developing power markets: how to anchor settlement to credible prices, keep support pools solvent, manage long-term investor risk, and ensure that market-linked renewable supply is matched by sufficient buyer participation.

Strengthening the pricing benchmark

The CfD settles payments based on prices discovered on the power exchanges. But these platforms handle only about seven per cent of India's total electricity trade. When the volume of power traded on exchanges is low, prices can swing sharply from day to day. The pilot's risk-sharing ratio partially mitigates this by giving generators a meaningful stake in maximising market revenues. But as CfD volumes grow, more stable pricing benchmarks, such as dedicated settlement indices, will be needed to reduce the impact of day-to-day price swings on settlement outcomes.

What can India learn from global markets on pricing benchmarks?

International experience shows that reference-price design for electricity evolves with market maturity.

UK	The UK uses different reference prices for different generation profiles. Intermittent technologies such as solar and wind settle against an Intermittent Market Reference Price based on hourly day-ahead prices. Baseload technologies settle against a volume-weighted Baseload Market Reference Price derived from forward-season contracts. This helps align the settlement benchmark with the operating and trading profile of each technology (Low Carbon Contracts Company n.d.a).
EUROPEAN MARKETS	Several other CfD-style schemes use longer averaging periods to reduce settlement volatility and limit incentives to influence prices in individual hours. Germany and Japan use monthly reference periods, while Denmark and the Netherlands have used an annual averaging period (Danish Energy Agency 2023; Ashurst 2022). Longer averaging windows can reduce short-term noise and gaming risks while allowing generators to continue responding to spot-market signals. A longer reference period also encourages generators to hedge in forward markets, which increases liquidity in those markets. However, this can be challenging for smaller developers as inaccurate estimates of the eventual reference price can lead to lower-than-expected revenues.
CHINA	China provides a useful example for markets where spot-price formation remains incomplete. In provinces without functioning spot markets, reference prices may be based on the monthly weighted average price of medium- and long-term contracts for comparable technologies (China Energy Transformation Programme 2025). The use of a reference based on comparable technologies also preserves some operational efficiency and locational signals for developers, as differences in earnings arising from trading strategies or location can translate into differences in total revenues.
JAPAN	Japan's feed-in premium mechanism links renewable energy support to market prices by paying a premium over a market reference price, while generators continue to earn revenues from wholesale market sales. This retains market exposure while reducing revenue uncertainty (Ashurst 2022).

FOR INDIA

The DAM price may remain suitable for the pilot because it is transparent and observable. As CfD volumes grow, India could assess a technology- and market-sensitive benchmark, including a DAM–RTM composite, a short rolling average, or a dedicated index drawing on exchange and reported bilateral transaction data.

Managing long-term price risk

While CfDs settle against day-ahead/real-time prices, strike prices reflect a 10–12 year revenue expectation. This mismatch creates residual risk for both developers and the settlement pool. In mature markets, generators can manage this uncertainty through electricity derivatives, which are contracts that allow them to lock in electricity prices months or years before delivery. As India's derivatives market develops, its interaction with CfDs will be critical in improving bankability and investor confidence.

What can India learn from global markets on CfD performance?

International experience shows that CfDs and electricity derivatives perform different but complementary functions.

UK AND EUROPEAN MARKETS	In the UK and European markets, financial CfDs stabilise a project's average revenue, while forwards and futures are used to manage risks that remain outside the CfD. These include differences between peak and baseload prices, mismatches between actual renewable generation and a standard hedge, locational basis risk, and residual merchant exposure (Schlecht et al. 2024). The sequencing is also instructive. European forward and futures markets began developing in the 1990s, before CfDs were introduced. CfDs were therefore layered onto an existing ecosystem of trusted spot-price benchmarks, central clearing, creditworthy counterparties, and suppliers with a commercial need to hedge future electricity purchases (Economic Consulting Associates 2015). Retail competition and supplier hedging obligations helped build forward-market liquidity. This created longer-tenor price signals that developers and lenders could use when assessing investment risk.
AUSTRALIA	Australia's Capacity Investment Scheme offers a useful parallel: it provides long-term revenue underwriting for renewable generation and clean dispatchable capacity, including battery storage, to reduce investor risk while supporting market-based project development (Australian Department of Climate Change, Energy, the Environment and Water 2026).

FOR INDIA

CfDs can provide medium-term revenue visibility, but they cannot substitute for a deeper forward market. CERC–SEBI coordination, longer-tenor electricity derivatives, stronger clearing arrangements, and credible spot-price benchmarks will be needed to reduce the residual risks carried by developers and the CfD.

Attracting buyers to manage 'cannibalisation'

The Indian pilot focuses on de-risking supply-side generators and brings new supply to exchanges. But as CfD-backed capacity grows, concentrated supply in similar time blocks could depress prices in precisely those hours. This is known as cannibalisation, where new supply erodes the market prices on which it depends for revenue. This increases pool payouts and weakens the market signals that CfDs are meant to preserve. The key risk, therefore, is not supply-side participation alone, but whether additional market-linked supply is matched by sufficient buyer-side demand. Without mechanisms that also draw distribution utilities and corporate consumers to procure through exchanges, the supply-demand imbalance will persist.

What can India learn from global markets on managing demand and supply?

Global evidence underscores the necessity of buyer-side mandates and intentional demand-building strategies.

Managing supply concentration

UK	The UK's experience shows that renewable capture prices can decline as similar generation technologies expand, increasing CfD top-up payments. The UK manages concentration partly through separate auction "pots" for technology groups and technology-specific capacity or budget limits (Woodman and Fitch-Roy 2019; Department for Energy Security and Net Zero 2024).
EUROPEAN MARKETS	The UK amended its CfD rules to halt top-up payments during negative-price periods, a restriction also adopted by Germany, Denmark, and the Netherlands. This discourages generation regardless of system conditions and strengthens the case for storage and flexible offtake. (Department for Business, Energy and Industrial Strategy 2020; Forschungsstelle für Energiewirtschaft [FfE] 2024; Danish Energy Agency 2024; Netherlands Enterprise Agency [RVO] 2024; RVO 2025) Denmark and the Netherlands demonstrate how CfD-like schemes can balance investor certainty with market responsiveness. Denmark moved from volume-based CfDs, which linked remuneration to fixed output volumes and eliminated volume risk, to capacity-based CfDs, which link remuneration to potential generation, allowing generators to avoid low-price periods and reducing cannibalisation incentives (Noonan et al. 2020). Spain's renewable energy auction framework uses a sliding feed-in premium, with the awarded price adjusted by a market factor. This preserves wholesale market participation while linking part of remuneration to market outcomes(Clean Energy for EU Islands Secretariat n.d).
CHINA	China operates a partial CfD model, in which a proportion of a project's generation capacity is covered by the CfD, and the remaining capacity must operate as merchant generation or under a PPA. When non-CfD capacity participates in the market, it supports forward market liquidity (Patel 2025).

Creating buyer-side demand

UK AND EUROPEAN MARKETS	The UK's Supplier Obligation creates implicit demand-side support by spreading CfD costs across licensed suppliers and their consumers, even though it does not operate a separate demand-side CfD (Low Carbon Contracts Company n.d.b). Corporate buyers accounted for a substantial share of European PPA activity in 2024, demonstrating how structured corporate procurement can deepen the demand side of clean-power markets. Corporate buyers signed 83 per cent of all PPAs in 2024, much of it through market-linked contracts that preserve dispatch flexibility (Santos 2025). Similarly, several EU jurisdictions route long-term contracted clean power through wholesale exchanges, with generators selling into the spot market and settling differences with off-takers financially (DEA 2023).

FOR INDIA

Future rounds should combine time-block and technology diversification with measures that attract buyers. Early options include structured C&I offtake products, exchange-routed open-access contracts, discom procurement windows for peak power, and time-of-day or time-of-use pricing signals that encourage demand to respond to system conditions. Discom-facing instruments can be introduced gradually as procurement approval processes, credit arrangements, and demand-side price signals mature.

Ensuring self-sustaining market-linked instruments

Scaling market mechanisms beyond the CfD pilot will require broader structural reforms. These include reviewing exchange price ceilings, unlocking new market-based revenue streams through ancillary services and carbon pricing, and introducing capacity markets. It will also require a clearer risk-sharing architecture so that downside protection does not depend only on periodic budgetary support. Without such interventions, the need for budgetary support will continue.

What can India learn from global markets on market support schemes?

International practice suggests that market-linked support schemes must be embedded within wider market reforms.

UK	In UK, CfD payments are managed by the government-owned Low Carbon Contracts Company (LCCC) but are not funded directly from the public budget. Difference payments are recovered through a Supplier Obligation Levy imposed on licensed electricity suppliers, with costs ultimately spread across electricity consumption. Applying this model in India would require insulating the CfD pool from distribution utility payment and credit risks (Low Carbon Contracts Company n.d.b).
GERMANY	Germany recycles revenues from emissions trading into public funds that support clean-energy investment, including CfD-style industrial decarbonisation instruments. This illustrates how carbon-market revenues can provide a durable source of transition finance (Federal Ministry of Finance 2026; Federal Ministry for Economic Affairs and Climate Action 2024).
CHINA	China finances renewable support in part through electricity pricing mechanisms, including costs recovered from specified consumer categories (China Energy Transformation Programme 2025). China is undergoing a transition to a more market-based power system. CfDs in China are a core instrument of this reform. Introduced by NDRC Document 136 in 2025, they are designed to bridge the transition from subsidy-driven to market-driven deployment of renewables. They are gradually moving away from administratively set feed-in-tariffs (FiTs) to competitive, auction-based price discovery, and guide new renewables projects towards market exposure and efficiency, while maintaining a guaranteed revenue floor. In tandem, the development of spot markets, increased trading in green energy certificates, and recent reforms to transmission cost allocation are moving China towards its goal of a more unified national power market characterised by greater flexibility and inter-provincial trade (Patel 2025 , Hove 2026).
AUSTRALIA	Australia uses government-backed revenue underwriting to accelerate investment in renewables and storage. This provides a safety net against low revenues while allowing the government to share in project earnings when revenues exceed defined thresholds (Australian Department of Climate Change, Energy, the Environment and Water 2026).

FOR INDIA

No single funding source is likely to sustain a multi-gigawatt CfD programme. India could supplement the initial public corpus with upside settlement receipts, REC revenues, future carbon-market proceeds, transaction-linked charges, or contributions from entities benefiting from CfD-backed procurement.

Beyond a stabilisation fund, future rounds could also explore tenure-based risk sharing, drawing from infrastructure PPP models. If market revenues fall below agreed thresholds, contracts allow a limited extension of the support period, giving developers a longer recovery window instead of relying only on upfront public support. However, such options should be subject to pre-defined caps and settlement rules.

Enabling aggregators and trading intermediaries

CfD-backed projects will need to participate across multiple exchange segments and manage forecasting and deviation risks. Larger developers may be able to do this through internal trading desks, but smaller developers could face higher transaction costs. Licensed traders or aggregators can pool projects, optimise bidding across markets, and manage deviations at the portfolio level, improving participation and making strike-price discovery more competitive.

What can India learn from global markets on aggregation?

European wholesale markets rely on balancing responsible parties, aggregators, traders, and portfolio managers to reduce the operational burden on individual generators (European Commission 2024).

EUROPEAN MARKETS

Aggregators pool generation from several projects, forecast their combined output, and optimise bids across day-ahead, intraday, and balancing markets. Positive and negative forecasting errors across plants can be netted at the portfolio level, reducing overall imbalance costs.

This aggregation layer allows smaller generators without specialised trading desks to participate in wholesale markets and CfD schemes on more comparable terms to those of larger developers.

Aggregators can also absorb or commercially manage imbalance risk, converting uncertain deviation costs into a more predictable portfolio-management fee.

European experience suggests that aggregator frameworks can develop alongside market reforms rather than necessarily preceding them, provided scheduling rights, credit requirements, imbalance responsibility, and settlement rules are clearly defined.

FOR INDIA

Qualified power traders could perform an interim aggregation role for the first CfD rounds. Over time, a formal framework for portfolio-level bidding, scheduling, and deviation settlement could lower participation costs and expand the range of developers able to compete.

The Government of India's pilot tender marks a decisive move from viewing CfDs as a policy idea to deploying them as a market instrument. It reflects a careful balancing act: de-risking investments to attract capital while preserving enough market signals to drive competitive behaviour and build exchange liquidity. The value of the pilot lies in the market intelligence it generates: on investor appetite, on price formation dynamics, and on the structural reforms needed to design sophisticated market instruments.

Recommendations

India should use the contracts-for-difference pilot as the first step towards a broader market framework, rather than as a stand-alone procurement exercise. Four immediate actions are critical to the success of CfDs.

- **First, India should revisit how price ceilings are used in the day-ahead and real-time markets**

  Price caps are useful during abnormal price spikes, market stress, or suspected market power. But if they remain a standing feature of market design, they can mute scarcity signals and reduce the arbitrage opportunity that storage and flexible clean-power projects need to recover costs. As the Ministry of Power (MoP)'s market-development report notes, price controls can contribute to the 'missing money' problem by limiting the ability of generators to earn the value of flexibility, reserves, and emergency generation (Ministry of Power 2023). A better approach would be to retain price caps as a contingency tool, with clear triggers for regulatory intervention, while allowing prices to reflect system conditions under normal circumstances.

- **Second, India should move faster on time-of-day and time-of-use tariffs, starting with C&I consumers and large utility procurement portfolios**

  If generators are expected to respond to market prices, buyers also need a reason to shift demand or procure dynamically during high-value hours. ToD and ToU tariffs can create that demand-side signal and help ensure that market-linked renewable supply is matched by more responsive consumption and procurement.

- **Third, India should make future contracts more flexible**

  The current reliance on long-term, inflexible PPAs makes it difficult for generators and discoms to respond to changing system needs. The MoP report recommends reducing long-term contract tenures to around 10-15 years and addressing rigidities such as take-or-pay obligations, right-to-revise schedules, and the absence of market-linked pricing and settlement (Ministry of Power 2023). Future CfD and RE and storage contracts should therefore clarify scheduling and dispatch rights, allow exchange-linked settlement, enable the sale of surplus or unrequisitioned power, and combine shorter tenures with clear risk-sharing rules. To keep the CfD pool sustainable, downside support should remain capped and time-bound, while upside payments, REC revenues, transaction-linked charges, or future carbon-market proceeds can be recycled into the settlement pool.

- **Finally, India should avoid treating CfDs as a fragmented product sitting outside the rest of the power-market architecture**

  CfDs will work best when they are aligned with deeper energy markets, market-based dispatch, dynamic retail tariffs, resource-adequacy planning, and forward-looking reserve procurement. In that sense, the pilot should help India test not only a new revenue-support instrument, but also the market rules and institutional capabilities needed for a cleaner, more flexible, and better-planned power system.

These steps would align India's CfD pathway with global experience, in which revenue-support instruments are usually embedded within broader market reforms, including credible benchmarks, demand-side participation, hedging tools, flexibility markets, and transparent settlement governance. If sequenced well, India's CfD pilot can become more than a domestic procurement experiment: it can offer a learning architecture for other developing power markets seeking to procure clean, flexible power while deepening wholesale markets and limiting fiscal exposure.

> CfDs will succeed only if India builds the market conditions around them: time-of-day tariffs that signal demand, flexible contracts that move beyond rigid PPAs, deeper wholesale markets, and risk-sharing mechanisms that can sustain scale.

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The authors

Rashi Singh

rashi.singh@ceew.in

Rashi Singh

Rashi Singh is a Programme Lead at CEEW, working on power market reforms, renewable energy procurement, and electricity sector transitions. Her work focuses on designing market-based instruments and regulatory pathways to support clean, reliable, and affordable power procurement in India. She is currently leading CEEW's research on emerging market mechanisms for integrating renewable energy and storage into India's power system.

Disha Agarwal

disha.agarwal@ceew.in

Disha Agarwal

With over 14 years of experience, Disha Agarwal leads the Power Markets programme at CEEW. She supports India's power sector transition through research and engagements on renewable energy deployment and integration, and has led key policy initiatives, including state energy roadmaps and national programmes, spanning strategy, regulation, and stakeholder engagement.

Vishal Tripathi

vishal.tripathi@ceew.in

Vishal Tripathi

Vishal is a Consultant with the Power Markets programme at CEEW. He works to strengthen open access for green energy, enabling large-scale renewable procurement by C&I consumers. He also examines tariff design, cost-reflective pricing, and rising power demand from sectors such as green hydrogen and data centres. He previously worked at NITI Aayog and holds a master's in Public Policy from Hertie School, Berlin.

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COUNCIL ON ENERGY, ENVIRONMENT AND WATER (CEEW)
ISID Campus, 4 Vasant Kunj Institutional Area
New Delhi – 110070, India
T: +91 (0) 11 4073 3300
info@ceew.in | ceew.in | @CEEWIndia | ceewindia

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