

RENEWABLE ENERGY SEGMENT

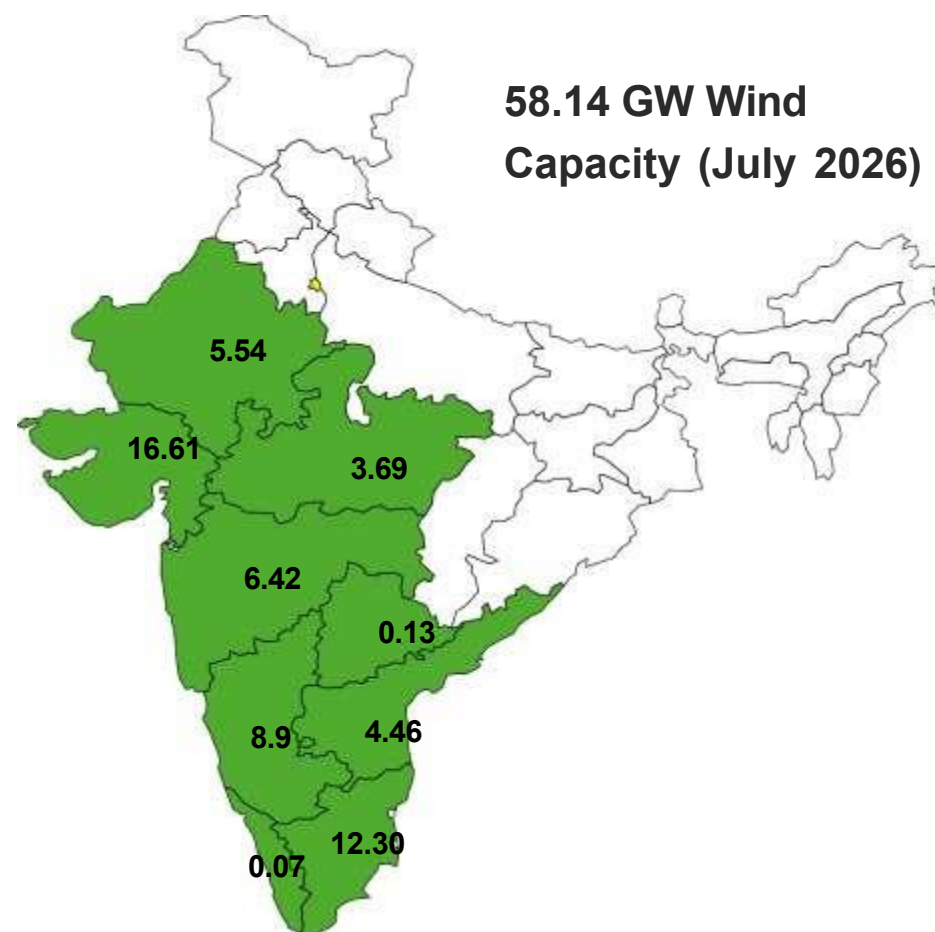


Snapshot

Indicator	Value
Total Installed RE Capacity	288.5 GW
Installed Wind Energy Capacity	58.14 GW
Installed Solar Capacity	162.15GW
Share of RE in Grid	53%

- India has surpassed 548.86 GW of installed Power Capacity
- 53% (297.3 GW) of total installed capacity is from Non- Fossil sources, including 8.78 GW of Nuclear and 52 GW of large hydro as well.
- 693.5 MW Wind capacity addition in July 26.
- 693.5 MW Wind capacity addition in FY2026-27 (Q2) and 6057.02 MW Wind capacity added in FY2025-26.

Last three-year quarter average (MW)	
Q1	1251.81
Q2	855.68
Q3	912.99
Q4	1536.28



RE tendering and PPA signing

Status of Wind Capacity in competitive bids (Apr'19 - Jul'26)				
	Project Awarded Capacity / LOA GW	Project Cancelled Capacity GW	Commissioned Capacity GW	Balance Capacity GW
PPA Signed	33.86	4.13	11.34	18.39
PPA Not Signed	11.82	0	0	11.82
Total	45.68	4.13	11.34	30.21

Status of RE Capacity in competitive bids (Apr'19 - Jul'26)				
	Project Awarded Capacity / LOA GW	Project Cancelled Capacity GW	Commissioned Capacity GW	Balance Capacity GW
PPA Signed	76.93	29.67	24.38	22.88
PPA Not Signed	46.65	0	0	46.65
Total	123.58	29.67	24.38	69.53

Source : [] IWTMA research

Note For RE Capacity: The data presented in the above dataset is available only at the REIA level and covers the period from **April 2019 to Jul 2026**. It includes renewable energy capacity across **solar, wind, hybrid, hybrid-RTC, FDRE and standalone storage projects**.

Tender Issued

Renewable energy tender issuance during the **opening month of Q2 FY2027 stood at approximately 4.6 GW**, with **hybrid projects accounting for the largest share (2.02 GW)**, followed by **solar (1.4 GW)** and **Battery Energy Storage Systems (BESS) (1.2 GW)**.

As Compare to Q1 FY2027, tender issuance moderated across most technologies. **Storage tenders** declined sharply from **5.5 GW to 0.7 GW**, while **solar** decreased from **1.3 GW to 0.7 GW**. **Wind (2.4 GW)**, **FDRE (1.5 GW)**, and **Hybrid-RTC (0.2 GW)**, which contributed to Q1 FY2027 activity, witnessed no new tender issuance in the opening month of Q2. However, **hybrid tenders increased from 0.9 GW to 2.0 GW**, emerging as the dominant technology and accounting for nearly **60% of the total tendered capacity**.

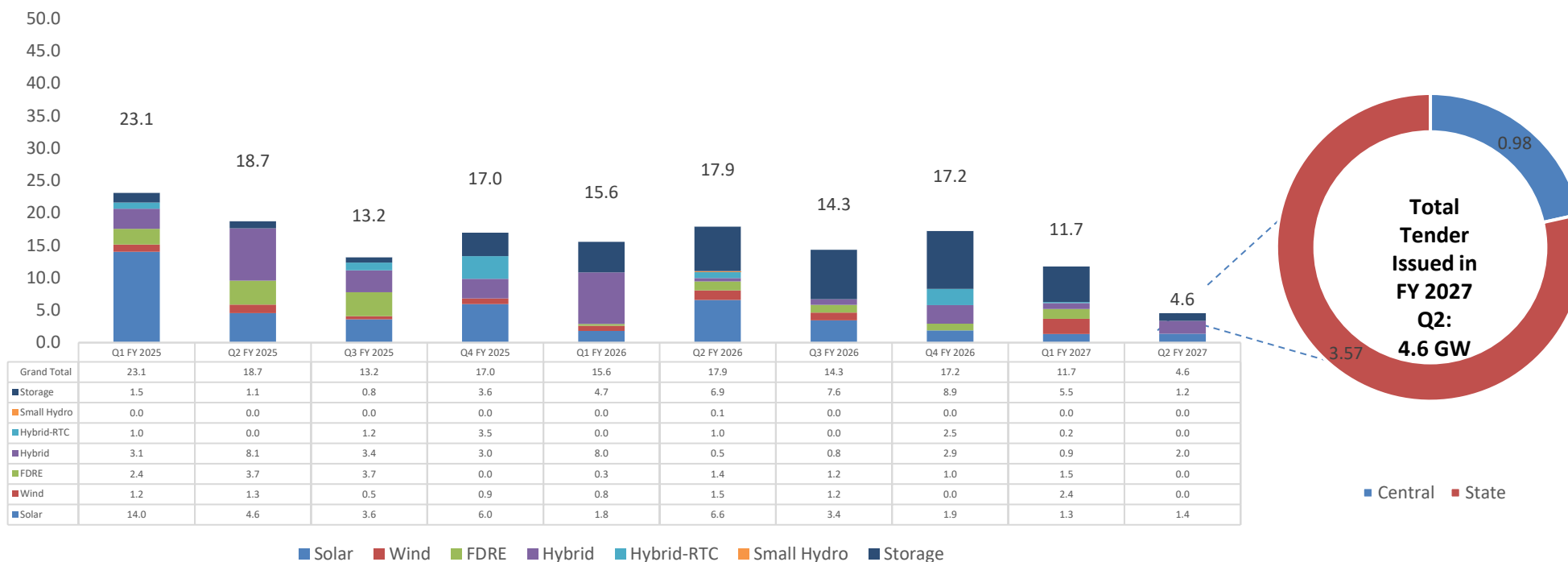
On a **year-on-year basis**, renewable energy tender issuance declined significantly from **17.9 GW in Q2 FY2026 to 3.4 GW in Q2 FY2027**, reflecting a more selective procurement approach. The decline was primarily driven by an **89% reduction in standalone solar tenders** (6.6 GW to 0.7 GW) and a **90% decline in storage tenders** (6.9 GW to 0.7 GW). Furthermore, **no tenders were issued for wind, FDRE, Hybrid-RTC, or small hydro**, compared with a combined **4.0 GW** in the corresponding period last year. Despite the overall slowdown, **hybrid tendering bucked the trend**, increasing from **0.5 GW to 2.0 GW**, making it the largest contributor to tender activity in Q2 FY2027.

Despite the sharp contraction in overall volumes, **hybrid tenders increased four-fold**, rising from **0.5 GW in Q2 FY2026 to 2.0 GW in Q2 FY2027**. As a result, hybrid projects accounted for nearly **60% of the total tendered capacity**, indicating a clear shift in procurement preferences towards integrated renewable energy solutions capable of delivering reliable and flexible power.

Overall, the tender mix suggests that procurement agencies are increasingly prioritising quality over quantity, with greater emphasis on hybrid and storage-backed projects rather than issuing large volumes of standalone renewable tenders. This evolving procurement strategy reflects the growing need to improve grid flexibility, support higher renewable energy penetration, and ensure reliable round-the-clock power supply as India's power system transitions towards a cleaner energy mix.

Tender Issued

FY Quarter Wise Renewable Energy Tender Issuance Trajectory by Fuel Wise in GW



Beginning of FY2027 Q2 indicates that India's renewable energy procurement strategy continues to prioritise dispatchable and grid-supportive technologies over conventional standalone renewable capacity., with approximately **4.6 GW** of capacity issued across four major tenders. **Hybrid projects dominated the month**, accounting for nearly **2.02 GW (around 59%)** of the total capacity through KREDL's integrated **2,000 MW renewable energy with 1,000 MWh BESS** tender in Karnataka. The tender reflects the growing preference for combining renewable generation with energy storage to improve grid flexibility and ensure reliable power supply.

Tender Issued

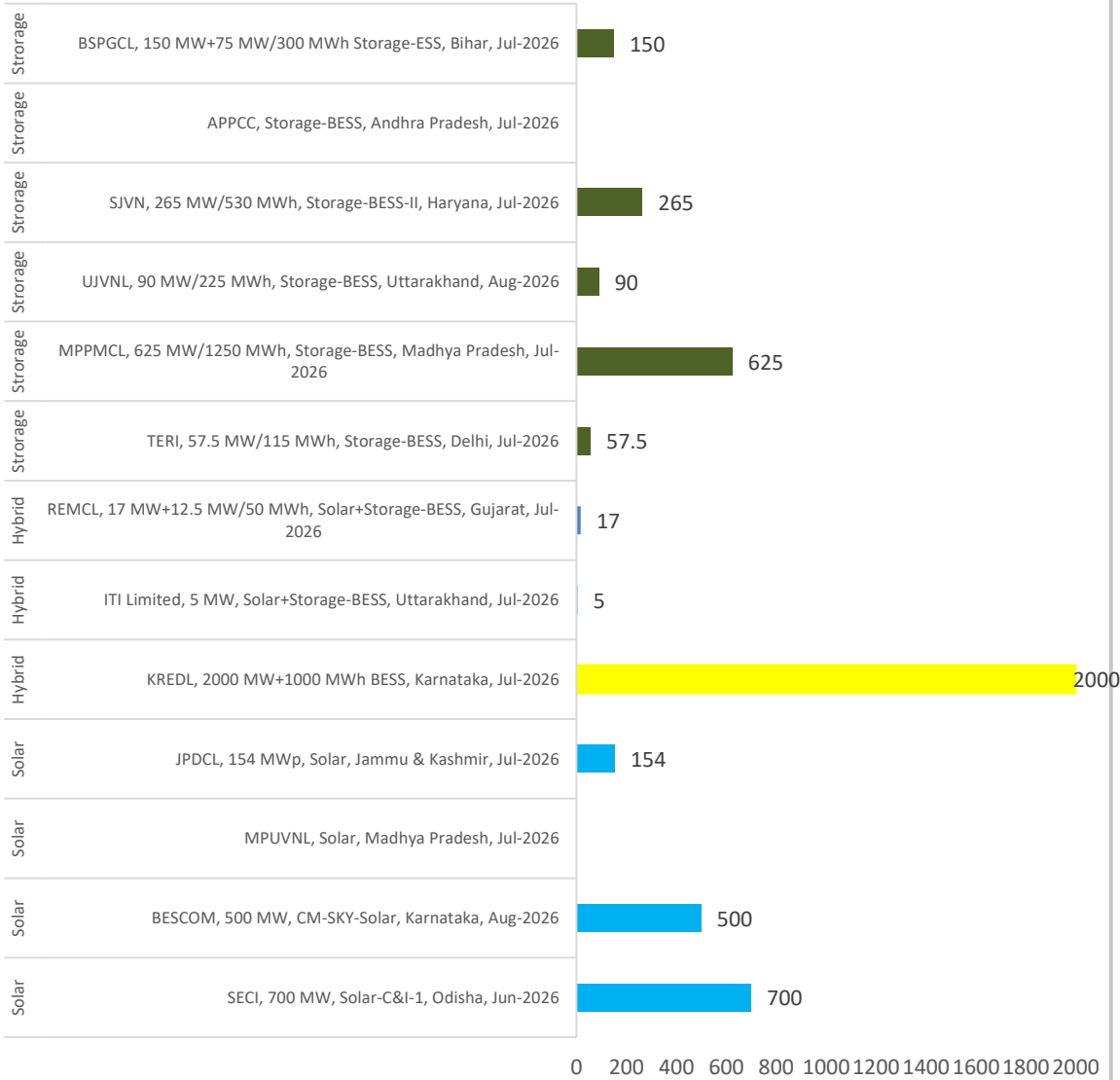
At the **beginning of Q2 FY2027**, renewable energy tendering in **July 2026** remained focused on **hybrid and storage-backed solutions**, with approximately **4.6 GW** tendered across major projects. **Hybrid projects dominated with 2.0 GW (59%)**, led by KREDL’s 2,000 MW renewable energy + 1,000 MWh BESS tender in Karnataka.

Storage accounted for 682.5 MW (20%), led by MPPMCL’s 625 MW BESS tender, while **solar contributed 700 MW (21%)** through SECI’s Solar-C&I tender in Odisha. Overall, **hybrid and storage together accounted for nearly 80%** of July’s tendered capacity, highlighting the continued shift toward **firm, flexible, and dispatchable renewable power solutions**.

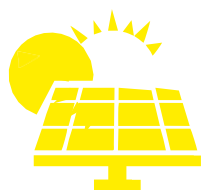
The tendering pattern also indicates a **growing integration of BESS with renewable generation**, as procuring agencies increasingly focus on improving grid flexibility, peak demand management and renewable energy integration. The presence of projects across **Karnataka, Madhya Pradesh, Delhi and Odisha** also shows that procurement activity remained geographically diversified.

The **2 GW KREDL hybrid tender** was the key driver of July’s activity, significantly increasing the share of dispatchable renewable capacity. Meanwhile, **MPPMCL’s 625 MW/1,250 MWh BESS** highlights the growing scale of standalone storage procurement.

Renewable Energy tender issued in FY Q2 2027 in MW



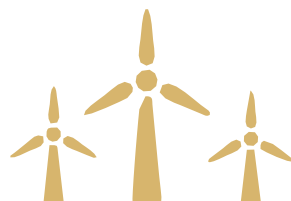
Tender Issued



Solar:

Standalone solar tendering continued with 1354 MW of announced capacity through a single tender, accounting for 20.7% of the total tendered capacity in Q2 FY2027. The quarter was marked by SECI's 700 MW Solar-C&I-1 tender in Odisha, aimed at meeting the growing renewable energy demand from the commercial and industrial (C&I) sector.

Although solar tender volumes moderated significantly compared to Q1 FY2027, the continued issuance of C&I-focused tenders highlights sustained demand for cost-competitive solar power outside the conventional utility-scale procurement segment.



Wind:

Wind Q2 FY2027, start with no tender. In Q1 2.35 GW of capacity tendered, accounting for 25.2% of the total quarterly capacity. The segment was dominated by SECI's 2,000 MW ISTS Wind Tranche-XX tender, supplemented by GUVNL's 250 MW and JBVNL's 100 MW procurements. The concentration of large utility-scale tenders indicates continued preference for high-capacity ISTS-connected wind projects to accelerate renewable energy deployment.



Hybrid, FDRE and RTC:

FDRE, Hybrid, and Hybrid-RTC Q2 FY 2027 start with 2022 MW tender, in Q1 2027 has collectively contributed 2.17 GW (23.2%) of the total tendered reflecting the growing emphasis on firm, dispatchable, and storage-integrated renewable energy. The segment was led by SECI's 1,200 MW FDRE-IX and 500 MW Renewable with/without ESS tenders, alongside RUMSL's 150 MW RTC project and several Solar+BESS tenders from AMC, RRECL, LED, and BHEL. This trend highlights the market's increasing preference for reliable renewable power capable of supporting grid stability and round-the-clock energy supply.



Storage:

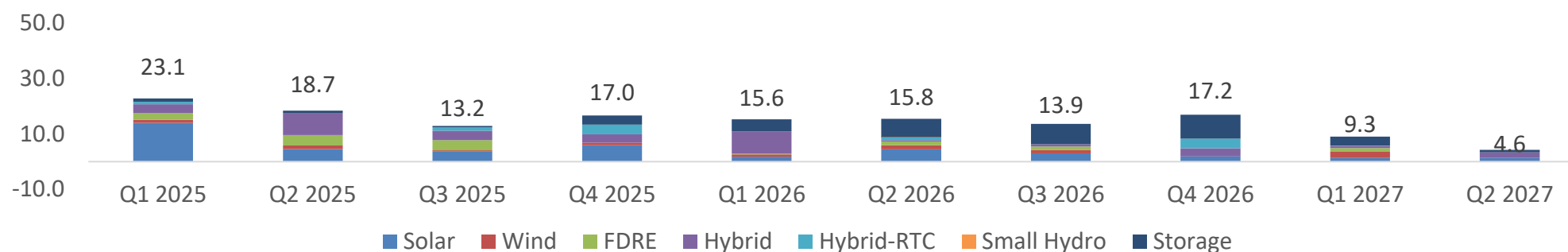
Storage procurement remained a key segment in Q2 FY2027, accounting for 1187.5 MW (20.2%) of the total tendered capacity. Major issuances included MPPMCL's 625 MW/1,250 MWh Battery Energy Storage System (BESS) project in Madhya Pradesh and TERI's 57.5 MW/115 MWh BESS project in Delhi, reflecting the continued emphasis on standalone battery energy storage systems to enhance grid flexibility, improve renewable energy integration, and support reliable power supply...

Allocated/Awarded Capacity

FY2027 Q2 opened with a relatively measured pace of renewable energy tendering, with around **4.6 GW** of capacity issued during the first month of the quarter. The tender pipeline was led by **hybrid projects (2.02 GW)**, which accounted for nearly **60% of the total capacity**, followed by **1354 MW of solar** and **1187.5 MW of Battery Energy Storage System (BESS)** tenders. Notably, **no new tenders were floated for wind, FDRE, Hybrid-RTC, or small hydro** during the period. The technology mix indicates a continued emphasis on **hybrid and storage-integrated projects**, reflecting the evolving procurement strategy towards firm and flexible renewable energy solutions that can better support grid reliability and renewable energy integration.

Q1 FY2027 recorded **9.34 GW** of renewable energy tenders, the **lowest quarterly capacity** during the analysis period. Despite the lower overall volume, the procurement mix shifted significantly towards **Storage (3.48 GW; 37.3%)**, **Wind (2.35 GW; 25.2%)**, and **FDRE/Hybrid/Hybrid-RTC (2.17 GW; 23.2%)**, indicating a growing preference for **dispatchable and storage-backed renewable energy**. While **Solar remained the most active technology by number of tenders**, its capacity was limited to **1.34 GW (14.4%)**, reflecting fewer large-scale standalone solar procurements.

FY Quarter Wise Renewable Energy Tender Alloted Trajectory by Fuel Wise in GW



During **FY2026**, quarterly tender volumes remained relatively stable between **13.91 GW and 17.22 GW**. **Storage emerged as the dominant technology**, increasing from **4.72 GW in Q1** to **8.92 GW in Q4**, driven by large **BESS and Pumped Storage Project (PSP)** tenders. **Hybrid procurement peaked in Q1 FY2026 (7.98 GW)** before declining sharply, while **Hybrid-RTC rebounded to 3.50 GW in Q4 FY2026**. **Solar procurement remained moderate** throughout the year, whereas **Wind and FDRE** recorded consistent but relatively lower procurement.

In **FY2025**, renewable energy tendering reached its highest levels, with quarterly volumes ranging from **13.17 GW to 23.12 GW**. **Solar dominated early procurement**, peaking at **14.00 GW in Q1 FY2025**, while **Hybrid (8.07 GW in Q2 FY2025)**, **FDRE (3.70 GW in Q2 and Q3 FY2025)**, and **Hybrid-RTC (3.52 GW in Q4 FY2025)** also witnessed strong activity. During this period, procurement was primarily focused on **capacity expansion through standalone solar and hybrid projects**, with comparatively limited emphasis on energy storage.

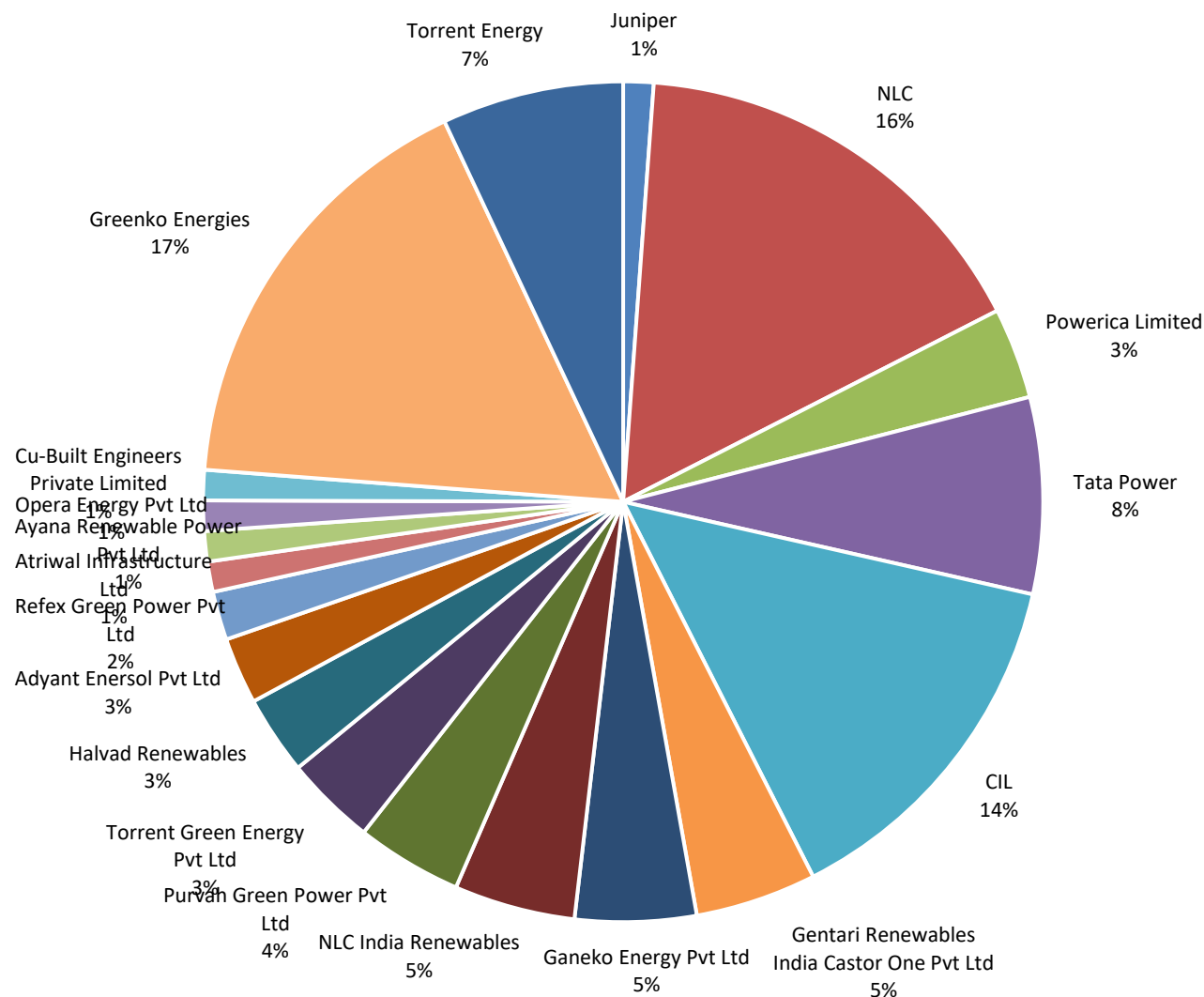
RE Key Winners

At the beginning of **FY2027 Q2**, around **4.29 GW of renewable energy capacity was awarded across 19 developers**, reflecting continued project allocation despite moderation in overall tendering activity. The allocation was led by **Greenko Energies (720 MW)**, **NLC (700 MW)**, and **Coal India Limited (600 MW)**, which together accounted for approximately **45.5% of the total awarded capacity**, highlighting the significant role of large public-sector and established renewable energy players in driving large-scale renewable energy deployment.

Among the major developers, **Tata Power (324 MW)** and **Torrent Energy (300 MW)** followed, while **Gentari Renewables India Castor One Pvt. Ltd.**, **Ganeko Energy Pvt. Ltd.**, and **NLC India Renewables** secured **200 MW each**. These were followed by **Purvah Green Power (175 MW)**, **Powerica Limited (150 MW)**, and **Torrent Green Energy (150 MW)**. The remaining capacity was distributed among several developers, with allocations ranging from **50 MW to 130 MW**, indicating broad participation across both established and emerging players.

Overall, the allocation pattern reflects a **moderately concentrated procurement landscape**, with the top five developers accounting for nearly **60% of the total capacity**, while the remaining **40%** was distributed among 14 developers.

Projects Won by Developers in RE Segment in Q2 FY 2027



PPA Status Overview (FY April 2019 – July 2026)

REIAs	REIA Wise PPA Status in terms of Capacity in MW				
	PPA Status				Grand Total
	Cancelled	Conditional Yes	No	Yes	
NHPC	30	12760	1200	8895	22885
NTPC	120	11596	900	6437	19053
SECI	2285	5700	7315	53952.8	69252.8
SJVN	150	4750	3928	7645	16473
Grand Total	2585	34806	13343	76929.8	127663.8

From **FY2019 to July 2026**, major Renewable Energy Implementing Agencies (REIAs) have awarded **127.66 GW** of renewable energy capacity. Of this, **76.92 GW (61%)** has achieved executed PPAs, while **48.1 GW (37%)** remains unsigned, including **34.80GW** under conditional approvals awaiting regulatory clearance and **13.34 GW** where PPAs are yet to be signed. In addition, **2.58 GW** of awarded capacity has been cancelled, indicating limited project attrition.

SECI continues to dominate the REIA pipeline with **66.97 GW** of awarded capacity, of which **53.95 GW** has secured PPAs. However, around **13 GW** remains pending across conditional approvals and unsigned PPAs, along with **2.29 GW** of cancelled capacity. **NHPC** has awarded **22.89 GW**, with **8.90 GW** under executed PPAs, while **13.96 GW** remains pending regulatory approvals or PPA execution. **NTPC** has a total awarded capacity of **18.93 GW**, with **6.43 GW** under signed PPAs and approximately **12.49 GW** awaiting approval or execution. **SJVN** has awarded **16.32 GW**, of which **7.65 GW** has achieved PPA closure, while **8.68 GW** remains under conditional approvals or pending execution.

Overall, while more than 60% of the REIA-awarded capacity has secured PPAs, nearly 47 GW of projects are still awaiting regulatory approvals or offtake agreements. Accelerating tariff adoption and PPA execution will be critical for translating the existing tender pipeline into on-ground renewable energy capacity and meeting India's clean energy deployment target

Policy Analysis: Addressing Unsigned PPAs to Accelerate Renewable Energy Deployment

The **MNRE's proposed One-Time Relief Package** represents a significant policy initiative to unlock approximately **44.8 GW of renewable energy capacity** that remains stranded due to **unsigned PPAs/PSAs** despite the issuance of Letters of Award (LoAs). The package aims to accelerate project execution by providing developers with a **90-day window** to conclude PPAs/PSAs, supported by a comprehensive set of financial, regulatory, and contractual relief measures.

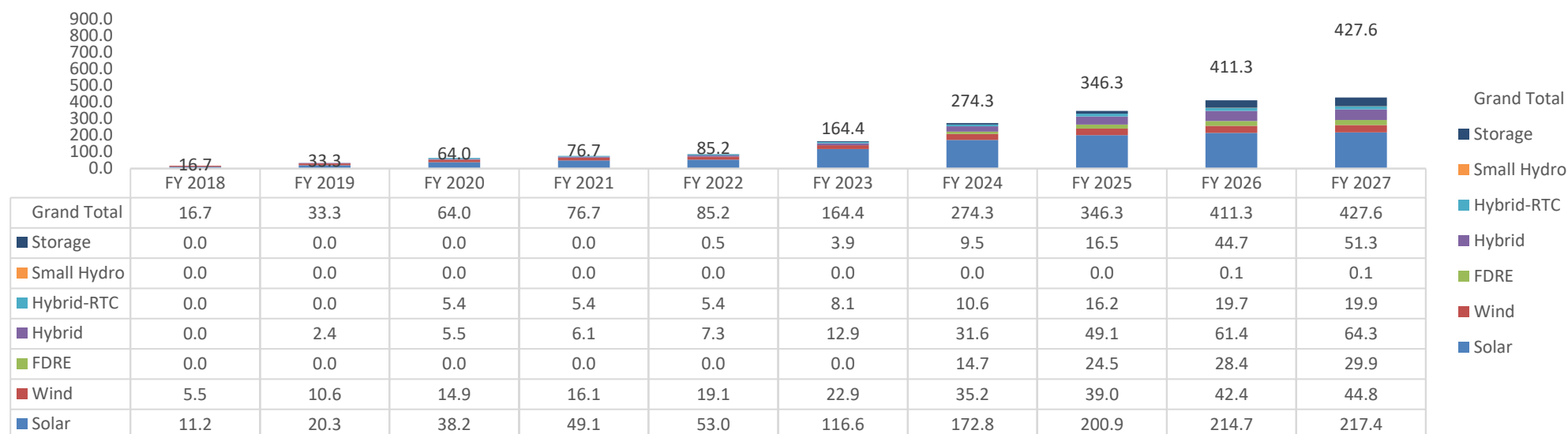
Key incentives include a **100% waiver of ISTS transmission charges**, support for **Battery Energy Storage Systems (BESS)**, access to **State Transmission Utility (STU) connectivity**, **deemed RPO/RCO compliance** for procuring entities, and **deemed tariff adoption**, thereby improving project bankability and reducing regulatory uncertainties. These measures are expected to enhance the commercial viability of delayed projects and facilitate faster financial closure.

The proposal also introduces greater contractual flexibility through provisions such as **LoA substitution**, **retention of granted connectivity**, and **penalty-free exit** for eligible developers. These reforms are intended to enable the transfer of stalled projects to capable developers while preserving valuable transmission infrastructure and minimizing execution delays.

Overall, the relief package is expected to reduce the backlog of unsigned PPAs/PSAs, improve investor confidence, accelerate renewable energy project commissioning, and support India's long-term clean energy and energy transition targets by ensuring that awarded projects are successfully implemented rather than remaining stranded.

Tender Issued Over the Years - Cumulative

Tender Issued By Fuel Type Year On Year Basis



From **FY 2018 to FY 2020**, renewable energy tendering in India was largely driven by **standalone solar and wind**, rising from **16.7 GW in FY 2018 to 64.0 GW in FY 2020**. Procurement structures during this period were relatively simple, supported by clearer offtake visibility and faster PPA closures, enabling smoother execution, while hybrid and RTC formats remained limited.

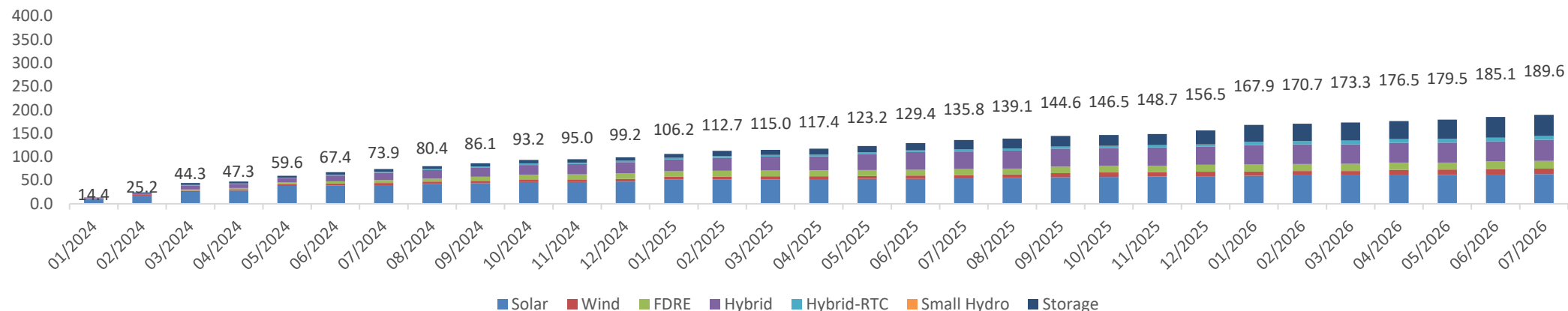
FY2021–FY2024: Renewable energy tendered capacity increased substantially from **76.68 GW in FY2021 to 269.22 GW in FY2024**, driven by rapid growth in **Solar (49.13 GW to 164.04 GW)** and **Wind (16.10 GW to 36.67 GW)**. **Hybrid** capacity expanded from **6.05 GW to 33.76 GW**, while **Hybrid-RTC** nearly doubled to **10.56 GW**. **Storage** procurement gained momentum, increasing from **0 GW to 9.47 GW**, and **FDRE** was introduced in **FY2024** with **14.73 GW**, reflecting a strategic shift toward firm, dispatchable, and storage-integrated renewable energy procurement.

FY2025–FY2026: Renewable energy tendered capacity increased from **341.22 GW to 403.66 GW**, driven by continued growth across all major technologies. **Solar** crossed **200 GW**, **Hybrid** expanded to **63.56 GW**, **Wind** reached **43.92 GW**, and **FDRE** increased to **27.38 GW**. The most significant growth was observed in **Storage**, which surged from **16.52 GW to 44.65 GW**, while **Hybrid-RTC** increased to **20.73 GW** and **Small Hydro** recorded its first procurement (**0.095 GW**), highlighting the growing emphasis on storage-backed and dispatchable renewable energy solutions.

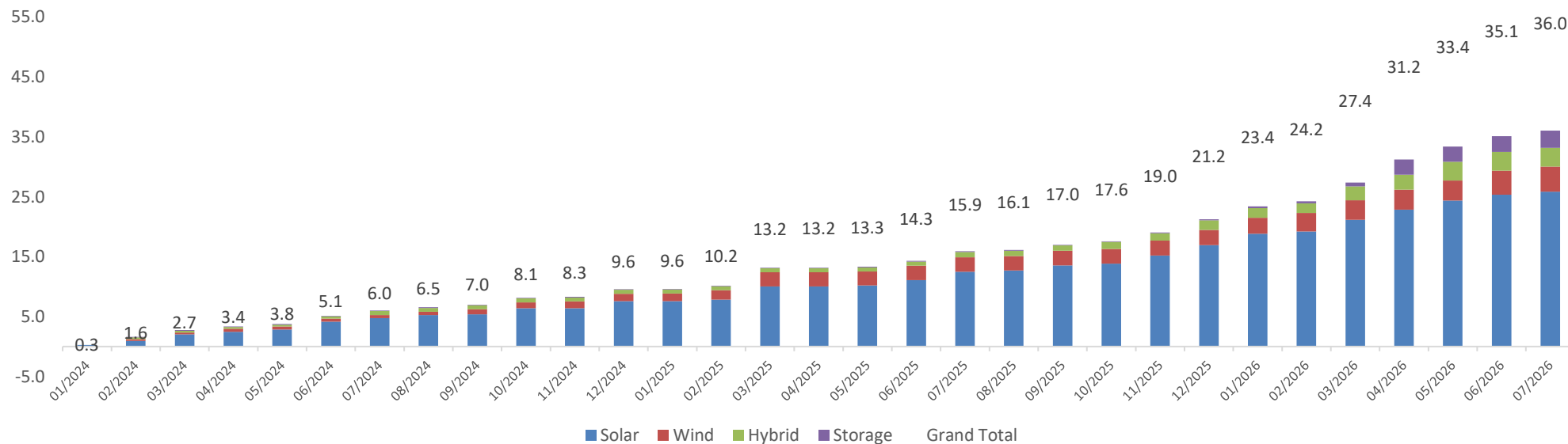
FY2027 (up to the beginning of Q2) saw cumulative renewable energy tendered capacity reach approximately **427.6 GW**. **Solar** continued to dominate the pipeline with **205.38 GW**, followed by **Hybrid (66.37 GW)**, **Storage (48.84 GW)**, **Wind (46.27 GW)**, and **FDRE (28.58 GW)**. The continued addition of hybrid and storage projects highlights the increasing focus on dispatchable renewable energy and strengthening grid reliability alongside conventional renewable capacity additions..

Tender Issued and Project Commissioned Analysis- MOM Basis

Tender Issued For 2 Years, Month on Month Basis in GW



Capacity Commissioned For 2 Years, Month on Month Basis



Continued

Tender Issued and Project Commissioned Analysis- MOM Basis

Renewable energy commissioning activity in **July 2026** remained strongly concentrated in solar and wind projects, with approximately **664.6 MW of renewable generation capacity** commissioned during the month. **Solar accounted for 513.4 MW (around 77%)**, making it the dominant source of new capacity, while **wind contributed 151.2 MW (around 23%)**. Major solar additions included **Coal India's 200 MW project in Gujarat**, **Waaree Forever Energies' 118.8 MW project in Madhya Pradesh**, and **NTPC REL's 64.76 MW project in Gujarat**. Wind commissioning was led by **Tata Power Renewable Energy's 100.8 MW project in Maharashtra** and **NTPC Renewable Energy's 50.4 MW project in Gujarat**.

Storage commissioning also gained momentum, with **ACME Suryodaya Pvt. Ltd. commissioning 270.85 MWh of storage capacity across two projects in Rajasthan**. This indicates increasing deployment of storage alongside renewable generation to support grid flexibility and dispatchability. Overall, July's commissioning activity highlights the continued dominance of **solar additions**, complemented by significant wind capacity and growing investment in **energy storage solutions**.

Tendering activity during FY Q2 2027 remained strongly focused on large-scale solar and storage-backed renewable solutions. Solar tenders accounted for around **1.35 GW**, led by **SECI's 700 MW C&I solar tender in Odisha** and **BESCOM's 500 MW CM-SKY solar tender in Karnataka**. At the same time, standalone **BESS tenders** reached around **1.19 GW**, with major tenders from **MPPMCL (625 MW)** and **SJVN (265 MW/530 MWh)**.

The most significant development was the **KREDL 2,000 MW solar + 1,000 MWh BESS tender**, which alone represents the largest capacity in the dataset and reinforces the growing preference for **dispatchable renewable power**. Other hybrid tenders, including **REMCL's 17 MW solar + 50 MWh BESS project** and **ITI Limited's 5 MW solar+BESS project**, further indicate increasing integration of storage with renewable generation.

Overall, the tender pipeline highlights a **clear transition from conventional standalone renewable procurement towards hybrid and storage-backed projects**, driven by the increasing need for **firm power, peak-hour supply, grid flexibility and improved renewable integration**.

FY-wise Trend Analysis

FY2020-21 to FY2026-27 (Q2 |

FY	FDRE(₹/kW	Hybrid(₹/kW	Hybrid-RTC(₹/kW	Solar(₹/kWh)	Solar+Storage(₹/kW	Wind(₹/kWh)
FY 2021		2.46		2.9	2.42	2.86
FY 2022		2.44		3.01	2.44	2.91
FY 2023		2.84			2.69	3.02
FY 2024	4.55	3.34		4.37	2.79	3.43
FY 2025	4.75	3.42			2.68	3.32
FY 2026	5.85	3.75		4.68	2.46	3.24
FY 2027			5.9	3.00	2.6	3.82

Based on the data for **FY2021–FY2027**, **Solar has remained the most cost-competitive standalone renewable technology**. The lowest tariff in the period was recorded for **Solar at ₹2.42/kWh in FY2021**, while the tariff remained below ₹2.80/kWh through FY2025. Although solar tariffs increased to **₹3.00/kWh in FY2027**, they remained relatively lower than most other renewable technologies.

Wind tariffs were comparatively higher, increasing from **₹2.86/kWh in FY2021 to ₹3.82/kWh in FY2027**, but remained relatively stable over the period. **Hybrid tariffs** also increased steadily from **₹2.46/kWh to ₹3.75/kWh**, reflecting the additional value of combining multiple renewable sources.

In contrast, **FDRE and Hybrid-RTC attracted significantly higher tariffs**, reaching **₹5.85/kWh and ₹5.90/kWh**, respectively. This premium reflects the additional cost of providing firm, flexible and round-the-clock renewable power. **Solar+Storage recorded ₹2.60/kWh in FY2027**, making it particularly competitive among newer dispatchable renewable configurations.

Overall, the tariff data highlights a clear **cost advantage for standalone solar**, while the higher tariffs of FDRE and Hybrid-RTC indicate the growing cost of reliability, flexibility and dispatchability in renewable power procurement.

Quarterly Trend Analysis – Last 9 Quarters

FY2024-25 Q1 to FY2026-27 Q2 |

FY	FDRE(₹/kWh)	Hybrid(₹/kWh)	Hybrid-RTC(₹/kWh)	Solar(₹/kWh)	Solar+Storage(₹/kWh)	Wind(₹/kWh)
FY 2025	4.75	3.42		2.68	3.32	3.76
Q1		3.42		2.84		
Q2	4.68	3.55		2.66	3.42	3.87
Q3	4.46	3.31		2.62	3.52	3.68
Q4	5.47	3.43		2.54	3.09	3.78
FY 2026	5.85	3.75	4.68	2.46	3.24	3.65
Q1			5.07		3.32	3.76
Q2	4.78			2.44	3.18	
Q3	6.74		4.35	2.68	2.86	3.44
Q4	6.28	3.75		2.34	3.85	3.67
FY 2027			5.90	3.00	2.60	3.82
Q1			5.90	3.07	2.60	4.15
Q2				2.73		3.78

Renewable tariffs showed a mixed trend, with for FY 2027 **Hybrid-RTC recording the highest tariff at ₹5.90/kWh**, reflecting the premium for firm and round-the-clock renewable supply. **Solar averaged ₹3.00/kWh**, while **Wind stood at ₹3.82/kWh** and **Solar+Storage at ₹2.60/kWh**. In **Q2 FY2027**, solar and wind tariffs moderated to **₹2.73/kWh** and **₹3.78/kWh**, respectively, from ₹3.07/kWh and ₹4.15/kWh in Q1, indicating a near-term easing in tariffs despite the continued shift towards firm and dispatchable renewable solutions.

FY 2025: Tariffs remained relatively moderate, with **Solar at ₹2.68/kWh**, **Hybrid at ₹3.42/kWh**, **Solar+Storage at ₹3.32/kWh** and **Wind at ₹3.76/kWh**. FDRE stood at **₹4.75/kWh**, indicating an early premium for firm renewable supply.

FY 2026: Tariffs showed a broader upward movement in firm and dispatchable technologies. **FDRE increased to ₹5.85/kWh**, while **Hybrid-RTC stood at ₹4.68/kWh**. Solar tariffs declined to **₹2.46/kWh**, whereas Solar+Storage remained broadly stable at **₹3.24/kWh**. Wind also remained relatively stable at **₹3.65/kWh**.