02 April 2024

India | Equity Research | Sector Update

Capital Goods

TYTW (The Year That Was) #1: Renewables bid @50GW in FY24 – beat all expectations

"The Year That Was" is a new series to understand and analyse the interesting annual statistics from the last fiscal. It's an attempt to highlight key trends and its implications on our coverage universe. FY24, was a remarkable year for Indian renewables, surpassing our expectations – witnessing a cumulative bid of 50GW of capacity. Note that FY21/FY22/FY23 saw bids in the tune of 18GW/12GW/7.2GW of PPA. We estimate FY24's 50GW of bidding will entail 40GW DC of solar and 9.5GW of wind capacities. Set against FY23, wind had a good run in FY24; the strong pipeline for hybrid projects (25GW), Suzlon and Inox Wind are natural beneficiaries. The start of FY24 saw the Indian government announcing a 50GW bid – Street expectation was much lower. Key risk: Delay in conversion of bid into power purchase agreement.

Bids of >50GW; ahead of all expectations

India conducted bids for ~50GW AC capacity – mix of only solar, only wind and hybrid. As per our data set, it included bids for 33GW solar, 2.4GW wind and 15GW of hybrid. We estimate this may entail a capacity addition of 48GW solar and 9.6GW wind.

Tender pipeline at 25GW; proportion of hybrid bids is increasing

The tender pipeline is also quite healthy at 25 GW - consisting of 4.1 GW of solar, 2.8 GW of wind and 18 GW of hybrid. In our opinion, if all open tenders were to conclude, it may need 20 GW of solar and 8 GW of wind capacity to the grid. We note there are $\sim 4 \text{GW}$ of new kinds of hybrid bids (FDRE bids are also in fray). The increasing proportion of hybrid bodes well for wind capacity addition. **Suzlon and Inox Wind are the natural beneficiaries.**

Bid winners; Win ratio of listed players disappointing

NTPC has won bids worth 3.5GW, of which 1GW is hybrid capacity; JSW Energy won 3GW of capacity, of which solar capacity stood at 2.4GW; SJVN won 3.7GW, of which 3.4GW was solar; NLC won 1.1GW of solar capacity, while Tata Power and Torrent Power won 650MW and 856MW, respectively. Among the unlisted players, Avvada won 6GW, Juniper won 1.3GW and Acme won 2GW

Beneficiary are Wind OEM's

The outlook for order inflows for the wind players remain strong on account of a) sharp rise in conclusion of RE bids and b) strong pipeline of RE tenders. Note that Suzlon and lnox wind have reported order inflows of 3.1GW while lnox wind has reported order inflows of 2.1GW in 9mFY24.

Exhibit 1: RE auction activity trend (MW)

| RE auction activity (MW) | FY20 | FY21 | FY22 | FY23 | FY24 |
|--------------------------|------|------|--------|-------|--------|
| Solar | 19.8 | 14.8 | 10,335 | 2,395 | 32,768 |
| Wind | 1.8 | 2.2 | 1,200 | 2,300 | 2,394 |
| Hybrid | 0.8 | 1.2 | 1,200 | 2,460 | 15,347 |
| Total RE | 22.3 | 18.0 | 12,735 | 7,155 | 50,509 |

Source: I-Sec research

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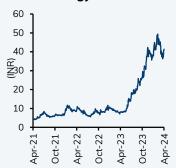
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Suzlon Energy



INOX Wind

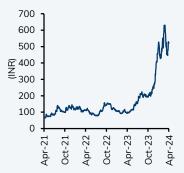




Exhibit 2: Total RE bids and share of leading listed players

| MW | FY20 | FY21 | FY22 | FY23 | FY24 |
|---------------|--------|--------|--------|-------|--------|
| Total RE bids | 22,310 | 18,200 | 12,735 | 7,155 | 50,509 |
| NTPC | 1,951 | 1,530 | 3,265 | 940 | 3,455 |
| Tata Power | 260 | 870 | 330 | 2,410 | 650 |
| JSW Energy | - | 1,260 | - | 300 | 3,020 |
| Torrent Power | - | 700 | - | - | 856 |
| SJVN | - | 100 | 1,550 | 588 | 3,742 |
| NLC | - | - | 810 | - | 1,110 |

Source: I-Sec research

Exhibit 3: Renewable capacity award company wise (MW)

| Solar MW | FY20 | FY21 | FY22 | FY23 | FY24 |
|------------------|--------|--------|--------|-------|--------|
| Total Bids | 19,815 | 14,830 | 10,335 | 2,395 | 32,768 |
| NTPC | 1951 | 1530 | 2815 | 290 | 2455 |
| Tata Power | 260 | 870 | 330 | 1100 | 0 |
| Azure | 4390 | 300 | 150 | 0 | 0 |
| Greenko | 900 | - | | - | - |
| Soft Bank | 930 | 600 | 0 | 0 | 0 |
| Acme | - | - | 375.0 | | 800 |
| Adani Green | 8600 | 3150 | 150 | 0 | 0 |
| Juniper | | | | 0 | - |
| Avaada | | | | | 4672 |
| Apraava | | | | | 550 |
| Renew Power | 1220 | 400 | 700 | 300 | 2400 |
| Torrent Power | 0 | 700 | 0 | 0 | 406 |
| JSW | 0 | 0 | 0 | 0 | 2400 |
| NLC | | 0 | 660 | 0 | 1110 |
| SJVN | | 100 | 1400 | 488 | 3442 |
| NHPC | | | 1000 | 100 | 200 |
| Mahindra Susten | 450 | | | | 300 |
| Others | 1114 | 7180 | 2755 | 117 | 14033 |
| Wind MW | FY20 | FY21 | FY22 | FY23 | FY24 |
| Total Bids | 1775 | 2170 | 1200 | 2300 | 2394 |
| Adani | 194.4 | 300 | 450 | | |
| INOX | | 50 | | | |
| JSW | | 1260 | | 300 | 440 |
| Azure | | | 120 | | |
| Avaada | | | | | 50 |
| Apraava | | | | | 300 |
| Ayana | | 300 | | | |
| NTPC | | | | 200 | |
| SJVN | | | | 100 | 300 |
| Renew | 200 | | 300 | | |
| Torrent | | | | 300 | 100 |
| Juniper Green | | | | | 210 |
| NLC India | | | | | |
| Mahindra Susten | | | | | |
| Others | 1,381 | 260 | 330 | 1,400 | 994 |
| Hybrid MW | FY20 | FY21 | FY22 | FY23 | FY24 |
| MW | 720 | 1200 | 1200 | 2460 | 15347 |
| Tata Power | 0 | 0 | 0 | 1310 | 650 |
| NTPC | 0 | 0 | 450 | 450 | 1000 |
| Renew | 120 | 0 | 0 | 300 | 2014 |
| Torrent Power | 0 | 0 | 0 | 0 | 450 |
| JSW | 0 | 0 | 0 | 0 | 180 |
| NLC | 0 | 0 | 150 | 0 | 0 |
| Juniper | 0 | 0 | 0 | 0 | 1305 |
| Ayana | 0 | 0 | 450 | 0 | 0 |
| Acme | 0 | 0 | 0 | 0 | 984 |
| Adani | 600 | 600 | 0 | 0 | 0 |
| Avaada | | | | | 1064 |
| Apraava | | | | | |
| Sembcorp | | | | | |
| Axis Energy | 0 | 380 | 0 | 0 | 1050 |
| Others | 0 | 220 | 150 | 400 | 6650 |
| Total Renewables | 22,310 | 18,200 | 12,735 | 7,155 | 50,509 |

Source: Company data, I-Sec research



Exhibit 4: Summary of all RE tenders bid out in FY24 (MW)

| Month | Organisation | Туре | Capacity(MW) | Winners | Capacity Allocated (MW) | Tariff (INR/kWh) |
|---------|------------------|-----------------|--------------|---------------------------------|-------------------------|------------------|
| Apr'23 | REMC | Hybrid | 1000 | Sprng | 100 | 4.0 |
| | | , | | Project Nine | 300 | 4.1 |
| | | | | TEQ Green | 60 | 4.3 |
| | RECPDCL | Solar | 1250 | Solar Direct | 300 | 2.6 |
| | | | | Renew | 400 | 2.6 |
| | DE0000 | | | NTPC | 550 | 2.6 |
| | RECPDCL | Solar | 500 | Renew | 200 | 2.7 |
| | SECI | hybrid | 1200 | Avaada Amp Energy | 300 100 | 2.7 4.6 |
| | SECI | Пурпи | 1200 | Renew | 600 | 4.7 |
| | | | | Hero | 120 | 4.7 |
| | | | | ACME | 380 | 4.7 |
| | GUVNL | Solar | 500 | Renew | 200 | 2.7 |
| | | | | Mahindra Susten | 100 | 2.7 |
| | | | | Solarcraft | 60 | 2.7 |
| | | | | Avada | 140 | 2.8 |
| May'23 | CESC | Hybrid | 150 | Amp Energy | 150 | 3.1 |
| | RUVNL | Solar | 1000 | Mahindra Susten | 200 | 2.6 |
| | | | | Sunfree | 200 | 2.6 |
| | | | | Solarcraft | 150 | 2.6 |
| | | | | Jakson | 100 | 2.6 |
| | | | | Shiva | 50 | 2.6 |
| | | | | Avaada | 200 | 2.6 |
| | | | | SJVN | 100 | 2.6 |
| | GUVNL | Solar | 600 | NHPC | 200 | 2.7 |
| | | | | SJVN | 200 | 2.9 |
| l | SECI | Wind | 690 | NTPC | 200 190 | 2.9 |
| Jun'23 | SECI | vvina | 690 | Green prairie Apraava | 300 | 3.2 |
| | | | | SJVN | 200 | 3.2 |
| Jul'23 | GUVNL | Solar | 800 | KPI Energy | 100 | 2.7 |
| jui 25 | GOVINE | 30101 | 000 | SAEL industries | 400 | 2.7 |
| | | | | NLC India | 300 | 2.7 |
| | PSPCL | Solar | 1200 | SJVN | 1200 | 2.5 |
| | SECI | Solar | 2000 | SAEL Industries | 600 | 2.6 |
| | | | | Renew | 600 | 2.6 |
| | | | | Eden Renewable | 300 | 2.6 |
| | | | | Jakson | 200 | 2.6 |
| | | | | Shiva Corp | 100 | 2.6 |
| | | | | Avaada | 200 | 2.6 |
| Aug'23 | RUVNL | Solar + battery | 600 | Blupine Energy | 100 | 6.68 |
| | DUNCI | ГI | 250 | ACME | 500 | 6.69 |
| | RUMSL | Floating solar | 250 | SJVN Green Energy NTPC Renew | 90 80 | 3.8 |
| | | | | Hunduja Renew | 80 | 3.8 |
| Sep'23 | Tata Power | Hybrid | 225 | Juniper Green | 75 | 3.27 |
| 3cp 23 | rata rower | Trybria | | TPREL | 150 | 3.28 |
| Oct'23 | RRVUNL | Solar | 810 | NLC India | 810 | 2.6 |
| Nov'23 | RECPDCL | Wind | 100 | Juniper green | 50 | 3.6 |
| | | | | Avaada | 50 | 3.6 |
| Nov'23 | SJVN - FDRE I | FDRE | 1384 | ACME | 250 | 4.38 |
| | | | | Juniper | 200 | 4.38 |
| | | | | Tata Power | 200 | 4.38 |
| | | | | Solarcraft | 150 | 4.39 |
| | | | | TEQ Green | 80 | 4.39 |
| NI- 100 | NUIDC | C-1- | 2000 | Hero Solar | 120 | 4.39 |
| Nov'23 | NHPC | Solar | 3000 | Solar Direct Avaada | 250 1000 | 2.52 |
| | | | | Mahindra | 300 | 2.53 2.53 |
| | | | | Jakson | 400 | 2.53 |
| | | | | Sprng Energy | 250 | 2.53 |
| | | | | Sembcorp | 300 | 2.53 |
| | | | | Apraava Energy | 250 | 2.53 |
| | | | | Hinduja RE | 250 | 2.53 |
| | | | | - | | |
| Dec'23 | SECI Tranche XII | Solar | 1000 | Avaada | 300 | 2.52 |



| Month | Organisation | Туре | Capacity(MW) | Winners | Capacity Allocated (MW) | Tariff (INR/kWh) |
|---------|--------------|-------------|--------------|-------------------------------------|-------------------------|------------------|
| | | | | Renew Power | 300 | 2.52 |
| | PFC | Solar | 1250 | Solarcraft NTPC | 150 900 | 2.52 2.53 |
| | | | | Acme | 300 | 2.53 |
| | CLD AH | Calara | 000 | Solarcraft | 50 | 2.53 |
| | GUVNL | Solar | 880 | SJVN Hinduja Renewables | 200 280 | 2.63 2.64 |
| | | | | Avaada Energy | 200 | 2.65 |
| | NTDC | I I de de d | 1104 | Solarcraft Power India 5 O2Power | 200 | 2.65 |
| | NTPC | Hybrid | 1104 | Sprng Energy | 300 250 | 3.35 3.35 |
| | | | | Acme Cleantech Solutions | 300 | 3.36 |
| | | | | Juniper Green Energy | 230 | 3.36 |
| Jan'24 | GUVNL | Wind | 164 | Avaada Energy Alfanar Projects | 24 50 | 3.37 3.42 |
| Juli 24 | GOVINE | VVIIIG | 104 | Juniper Green | 90 | 3.44 |
| | | | | EDF Renewables | 24 | 3.45 |
| | SECI | Hybrid | 900 | NTPC Juniper | 300 150 | 3.15 3.21 |
| | | | | Sembcorp | 450 | 3.21 |
| | NTPC | Solar | 1500 | Solarpack | 300 | 2.60 |
| | | | | Apraava | 300 | 2.65 |
| | | | | Avaada Renew Solar | 500 400 | 2.65 2.65 |
| | GUVNL | Hybrid | 200 | KPI Green | 50 | 2.99 |
| | | • | | Juniper | 150 | 3.04 |
| | GUVNL | Solar | 600 | SJVN Green SAEL | 100 200 | 2.54 2.55 |
| | | | | Coal India | 300 | 2.55 |
| | REMC | RTC | 750 | Torrent Power | 100 | 4.25 |
| | | | | Renew Solar Power | 200 | 4.37 |
| | | | | TEQ NTPC | 100 200 | 4.37 4.37 |
| | | | | ACME | 100 | 4.37 |
| | | | | Taa Power | 50 | 4.43 |
| Feb'24 | SJVN | Solar | 1500 | Solarcraft GRT Jewellers | 300 150 | 2.52 2.52 |
| | | | | Mahindra | 300 | 2.53 |
| | | | | JSW Neo | 700 | 2.53 |
| | NUIDO | 11.1.1.1 | 000 | NTPC RE | 50 | 2.54 |
| | NHPC | Hybrid | 960 | Juniper O2 Power | | 3.48 3.49 |
| | | | | Avaada | 510 | 3.49 |
| | SJVN | Hybrid | 1500 | Juniper | 150 | 3.43 |
| | | | | Datta Sembcorp | 50 440 | 3.47 3.48 |
| | | | | O2 | 270 | 3.48 |
| | | | | Evergreen | 60 | 3.48 |
| 14224 | CCECI | Cal | 4405 | Avaada | 530 | 3.49 |
| Mar'24 | GSECL | Solar | 1125 | Engie NHPC | 200 | 2.62 2.66 |
| | | | | JSW Neo | 300 | 2.66 |
| | | | | SJVN | 200 | 2.66 |
| | NTPC | Solar | 1500 | NTPC Solren | 225 300 | 2.67 2.59 |
| | IVII C | Joiui | 1500 | JSW | 700 | 2.60 |
| | | | | Avaada Energy | 500 | 2.60 |
| | SECI | Solar | 1500 | JSW Suppure Energy | 700 300 | 2.56 |
| | | | | Sunsure Energy UPC renewables | 250 | 2.56 2.57 |
| | | | | NTPC | 250 | 2.57 |
| | SECI | Solar | 1500 | Avaada | 300 | 2.57 |
| | | | | Renew Engie | 300 100 | 2.57 2.57 |
| | | | | SAEL | 600 | 2.57 |
| | | | | NTPC | 200 | 2.58 |
| | SECI | FDRE | 480 | Hero Solar JSW Neo | 120 180 | 5.59 5.60 |
| | | | | JONN INCO | 100 | 00.0 |



| Month | Organisation | Туре | Capacity(MW) | Winners | Capacity Allocated (MW) | Tariff (INR/kWh) |
|-------|---------------|--------|--------------|--------------------------|-------------------------|------------------|
| | | | | Serentica Renewables | 100 | 5.60 |
| | | | | Renew solar | 80 | 5.60 |
| | NTPC | Hybrid | 1584 | Axis Energy | 300 | 4.64 |
| | | | | Juniper Green | 200 | 4.69 |
| | | | | Hero Solar Energy | 120 | 4.69 |
| | | | | Serentica Renewables | 200 | 4.71 |
| | | | | Tata Power Renewable | 200 | 4.71 |
| | | | | BN Dispatchable | 110 | 4.72 |
| | | | | Renew Power | 400 | 4.72 |
| | | | | ACME cleantech Solutions | 54 | 4.73 |
| | NTPC | Hybrid | 1500 | Axis Energy | 750 | 3.27 |
| | | | | Juniper Green | 300 | 3.29 |
| | | | | Acme | 150 | 3.32 |
| | | | | Renew | 300 | 3.32 |
| | MSEDCL | Soalr | 7783 | SJVN | 1352 | 3.10 |
| | | | | Megha | 1880 | 3.10 |
| | | | | Avaada Engineering | 1132 | 3.10 |
| | | | | Mahagenci | 1071 | 3.10 |
| | | | | Torrent Power | 306 | 3.10 |
| | | | | Others | 2042 | 3.10 |
| | Torrent Power | Hybrid | 450 | Torrent Power | 450 | 3.65 |

Source: I-Sec research, Bharat e-tenders

Exhibit 5: RE tendering pipeline

| Sr. No. | Tender floated by | Phase | Туре | Capacity (MW) | Solar | Wind |
|---------|-------------------|--------------|-----------------|---------------|-------|------|
| 1 | SECI-FDRE-I | I | FDRE | 500 | 250 | 250 |
| 1 | SECI-FDRE-III | III | FDRE | 800 | 400 | 400 |
| 1 | SECI-FDRE-IV | IV | FDRE | 1260 | 1260 | 630 |
| 2 | Adani Mumbai | | Wind | 600 | | 600 |
| 3 | REMC | | Hybrid | 695 | 695 | 209 |
| 4 | SJVN | | Wind | 600 | | 600 |
| 5 | SECI FDRE V | V | FDRE | 1000 | 1000 | 500 |
| 6 | SECI | Tranche VIII | Hybrid | 1200 | 1200 | 480 |
| 7 | SJVN | Tranche 2 | Hybrid | 1500 | 1500 | 600 |
| 8 | NTPC | Tranche V | Hybrid | 1000 | 1000 | 400 |
| 9 | NTPC | Tranche VI | Hybrid | 1000 | 1000 | 400 |
| 9 | GUVNL | Phase VII | Wind | 600 | | 600 |
| 10 | NTPC | Tranche III | Wind | 1000 | | 1000 |
| 11 | NTPC | Tranche III | Solar | 1500 | 1500 | |
| 12 | RECPDCL | | Solar | 500 | 500 | |
| 13 | RUMSL | | FDRE | 400 | 200 | 200 |
| 14 | PSPCL | | Solar | 1000 | 1000 | |
| 15 | MSEDCL | | Coal + Solar | 5000 | 5000 | |
| 16 | UPNEDA | | Solar | 600 | 600 | |
| 17 | SECI | XV | solar + storage | 1200 | 1200 | |
| 18 | GUVNL | | Solar | 500 | 500 | |
| 19 | GUVNL | | HYbrid | 1000 | 1000 | 300 |
| 20 | MSEDCL | | Hybrid | 500 | 500 | 250 |
| 21 | SJVN | | FDRE | 600 | 600 | 450 |
| | Total | | | 24555 | 20905 | 7869 |

Source: I-Sec research



Exhibit 6: Suzlon order inflow

| Date | FY | Quarter | Order wins (MW) | Order source | Product configuration (no. of turbines x Size) |
|-------------------|-------|---------|-----------------|-------------------------|--|
| 7-Mar | FY 24 | Q4 | 72.45 | Juniper Green | 23 X 3.15 MW |
| 29-Feb | FY 24 | Q4 | 30 | EDF Renewables | 10 X 3 MW |
| 30-Jan | FY 24 | Q4 | 642 | ABC Cleantech | 214 X 3 MW |
| 5-Jan | FY 24 | Q4 | 225 | Everrenew Energy | 75 X 3 MW |
| 28-Dec | FY 24 | Q3 | 300 | Apraava Energy Private | 100 X 3 MW |
| 27-Dec | FY 24 | Q3 | 100.8 | Nordic Energy | 32 X 3.15 MW |
| 27-Dec | FY 24 | Q3 | 100.8 | Mahindra Susten | 48 X 2.1 MW |
| 21-Dec | FY 24 | Q3 | 193.2 | KP Group | 92 X 2.1 MW |
| 15-Dec | FY 24 | Q3 | 100.8 | leading Global Utility | 32 X 3.15 MW |
| 27-Oct | FY 24 | Q3 | 50.4 | Juniper Green | 16 X 3.15 MW |
| 22-Sep | FY 24 | Q2 | 29.4 | BrightNight | 14 X 2.1 MW |
| 25-Aug | FY 24 | Q2 | 201.6 | O2 Power | 64 X 3.15 MW |
| 24-Aug | FY 24 | Q2 | 31.5 | Integrum Energy | 15 X 2.1 MW |
| 14-Jul | FY 24 | Q2 | 100.8 | Everrenew Energy | 48 X 2.1 MW |
| 11-Jul | FY 24 | Q2 | 47.6 | KP Group | |
| 24-May | FY 24 | Q1 | 300 | Torrent power | 100 X 3 MW |
| 22-May | FY 24 | Q1 | 204 | Serentica Renewables | 68 X 3 MW |
| 19-May | FY 24 | Q1 | 25.2 | Sri Kumaraswamy Mineral | 12 X 2.1 MW |
| 19-May | FY 24 | Q1 | 69 | Nordic company | 23 X 3 MW |
| 17-May | FY 24 | Q1 | 99 | Vibrant Energy | 33 X 3 MW |
| 2-May | FY 24 | Q1 | 69.3 | Juniper Green | 22 X 3.15 MW |
| 23-Apr | FY 24 | Q1 | 39 | Thermax | 13 X 3 MW |
| 12-Apr | FY 24 | Q1 | 50.4 | Sembcorp | 24 X 2.1 MW |
| 18-Oct | FY23 | Q3 | 48.3 | Adani Green | 23 X 2.1 MW |
| 11-Oct | FY23 | Q3 | 144.9 | Aditya Birla group | 69 X 2.1 MW |
| 6-Sep | FY23 | Q2 | 180.6 | Sembcorp | 86 X 2.1 MW |
| Total in FY24-YTD | | | 3082.25 | <u> </u> | |
| Total in FY23 | | | 373.8 | | |

Source: I-Sec research

Exhibit 7: Inox wind order inflows

| Sr No | Quarter | Order from | Size (MW) | Configuration | Description |
|-------|---------|------------|-----------|---------------|---|
| 1 | Q1FY24 | NTPC RE | 150 | | Turnkey project |
| 2 | Q1FY24 | AB Energie | 100 | 3.3MW X 30 | Turnkey project |
| 3 | Q3FY24 | | 279 | 3.3MW X 80 | Equipment supply for 180MW and turnkey for 99MW |
| 4 | Q3FY24 | NLC India | 50 | | Turnkey project |
| 5 | Q4FY24 | CESC | 1500 | | Turnkey project |
| Total | | | 2079 | | |

Source: I-Sec research



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