

CII National Award for Environmental Best Practices-2025

Piramal Pharma Limited -Digwal



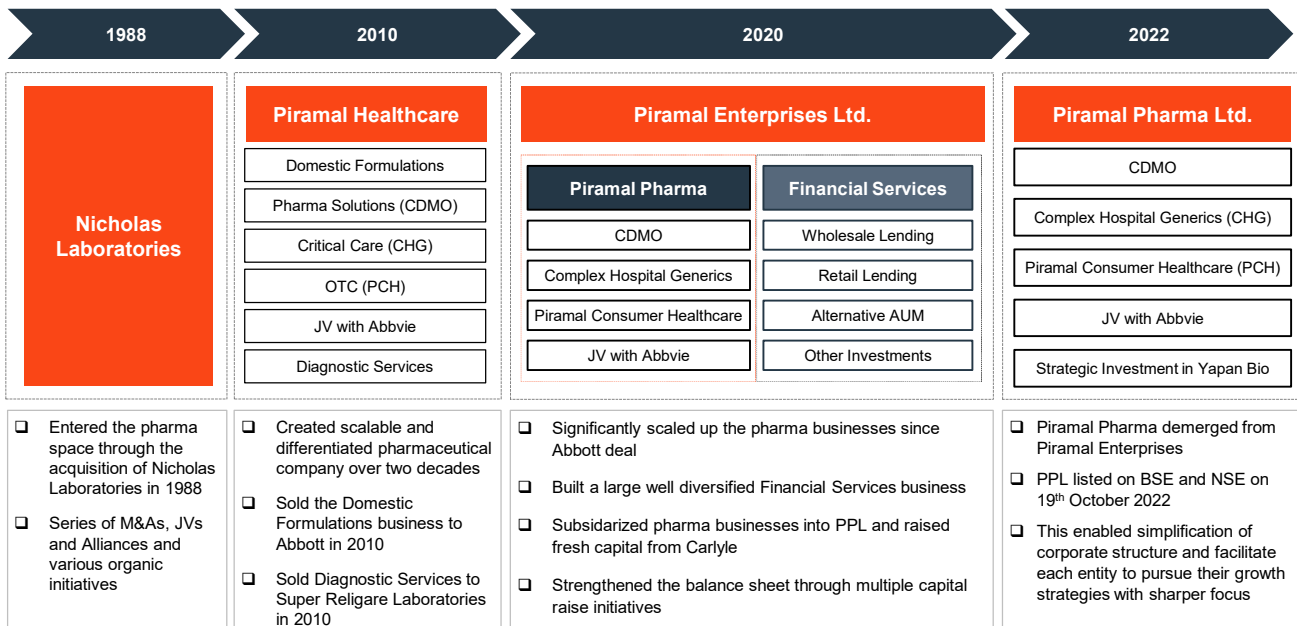
📍 Location Address: Piramal Pharma Limited, Digwal (Village), Kohir (Mandal), Sangareddy (District), Telangana 502321, India.

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Piramal Pharma - Phases of our Evolution



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17 Manufacturing & Development Facilities -North America, UK / Europe, and India

Contract Development and Manufacturing Organization

Innovation Focused Integrated CDMO with Global Operations



NORTH AMERICA
Aurora Riverview Sellersville
Lexington

API, High Potent API, OSDs,
Liquid, Cream, Ointment, Sterile
Injectables
Inhalation Anesthesia



UK / EUROPE
Grangemouth, Morpeth

API, ADC (Antibody Drug
Conjugates),
Formulations (including hormones)



INDIA
Ahmedabad Turbhe Mahad, Rabale
Pithampur, Digwal, Ennore, Hyderabad

API, Formulations, Drug discovery
and development, Nutrition solutions
Inhalation anesthesia, Specialty
Fluorochemicals



Piramal Consumer Healthcare



- PPL has 49% stake in a Joint Venture, Abbvie Therapeutics India Pvt Ltd. (51% held by Abbvie), a leader in Ophthalmology formulations in the India market
- PPL has 33.33% strategic investment in Yapan Bio Pvt Ltd, a CDMO that specializes in Vaccines and Biologics

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Overview of Piramal Pharma Limited, Digwal

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Major Regulatory



Major Products:

- Verapamil HCl
- Trazodone HCl
- Diltiazem HCl
- Mebeverine HCl
- Ketoconazole

Major Equipment & Utility System:

- | | | | |
|--------------------|-------------------|-----------------------------|--------------------------------------|
| • Reactors | • PF, RCVD, FBD | • Pumps, Vacuum Pumps | • AHU's |
| • Centrifuges, VTD | • Sparkler Filter | • Boilers, Hot water System | • Cooling Towers, Air Compressors, |
| • STD, ANFD | • DM Water System | • Chillers & Brine Chillers | • Nitrogen Plant, MEEATFD & Stripper |

Overview Commercial launches of API, Advanced Intermediates, support large volume launches

Established in 1988, located in Digwal, Telangana, India

100 Acre Campus. cGMP manufacturing facility consisting of three manufacturing units (Unit-1,2,3)

Site has over 1700 employees

Clean Environment without Penicillin, Cytotoxic, Cephalosporin, and Steroids production

The site has various awards which includes International Safety Award from British Safety Council – 2020; Grow Care India Environment Award 2019

Development & Manufacturing Capabilities

- Total volumetric capacity of 780.11KL having 266 reactors (120 GL/ 141 SS/ 5 Hastalloy) ranging capacity from 10 L to 15000 L
- Hydrogenation facility having five reactors with capacity of 25L to 4000 L (up to 40 bar pressure)
- Seven multipurpose packed bed solvent recovery columns with kettle capacity of 3000 L to 15000 L.
- Well integrated Quality Control Lab equipped with HPLC, UPLC, GC, ICP-MS, LCMS, Coulometer, Particle size analyzer, UV, FTIR, auto titrator and other laboratory instruments
- Integrated utility system with in-house Steam/Chilled water/ Chilled brine/ Cooling tower/ N2 plant/ Compressed air/ Breathing air/ Instrument air
- Centralized zero Liquid Discharge system (ZLD) for effluent treatment
- Customizable particle engineering capabilities including Co-mill, Multi-mill Wet mill, Jet-Mill using Air and Nitrogen carrier gases
- Integrated Process Development Lab with fume hood/working bench/analytical lab
- Fully equipped Kilo lab/ Pilot plant for new molecule development and scale up

Manufacturing Process at Digwal



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Biomass Boiler Conversion



Trigger:- Senior & Middle Management sustainability target to cut Scope 1 & 2 GHG by 42% by 2030.

Uniqueness:- First large-scale pharma facility to replace coal with biomass briquettes; ~24,000 tCO₂e reduction/year; 17% total site emissions cut; award-winning project

Planned vs Actual:- Planned: Jan 2024 – Dec 2024; Actual: Commissioned early 2025.

Major Milestones vs Roadmap★

- Boiler modification completed Q3 2024
- Switch from coal to biomass Dec. 2024
- Efficiency boost from 79 → 82% by Q2 2025
- Achieved 14,811 tCO₂e reduction & ₹42L savings in 7 months.

★ Note:- CY-25 & FY-25 Data up to July-2025

165 kWp Rooftop Solar Plant



Trigger:- Middle Management – reduce reliance on coal-based grid electricity & improve OPEX efficiency

Uniqueness:- Rapid high-impact results; 359.1 MW clean energy generated in <3 years; zero downtime with 3-inverter stable operation; ~ ₹29L savings achieved.

Planned vs Actual:- Planned: Nov 2023 – Mar 2024; Actual: Commissioned between Nov 2023 – Apr 2024 (on time).

Major Milestones vs Roadmap★

- System installation & grid sync Q4 2023
- Consistent daily output (444–558 kWh) with zero alarms
- Q1–Q2 2025 output tripled vs 2024
- By Jul 2025: 269 tons CO₂, 146 tons coal saved

Sludge Moisture Reduction by PD



Trigger:- Operating Level – persistent sludge handling issues (70% moisture, rainy season leaks, high TSDF cost)

Uniqueness:- First adoption of Paddle Dryer in pharma ZLD/ETP; sludge moisture cut from 70% → 15%; disposal reduced by 74%; sludge reused as fuel in cement industry.

Planned vs Actual:- Planned: Apr 2023 – Mar 2024; Actual: Installed Apr 2023, fully operational by Jul 2023

Major Milestones vs Roadmap★

- Installation & commissioning Q2 2023
- Achieved 74% sludge reduction every year.
- ₹197L OPEX savings over 2.4 years
- 20 tCO₂e avoided by Jul 2025
- Continuous 24x7 operations across monsoons

Note:- PD- Paddle Dryer



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Benefit Category	Biomass Boiler Conversion	165 kWp Rooftop Solar Plant	Sludge Moisture Reduction by PD*
People / Society	Cleaner air, reduced coal use (SDG 3, 7, 13)	Community leadership in clean energy (SDG 7, 13)	Cleaner environment, better hygiene (SDG 3, 6, 12)
Moral / Motivation	Award recognition boosts pride (BRSR Principle 1 & 8)	Green initiative motivates employees (BRSR Principle 3)	Relief from sludge-handling stress (BRSR Principle 3)
Skill Upgradation	Training in biomass handling (SDG 8)	Solar O&M skill-building (SDG 4, 8)	Training in waste-to-energy tech (SDG 8, 12)
Attitude Shift / Development	Climate responsibility mindset (BRSR Principle 6)	Renewable-first culture (BRSR Principle 6)	Compliance ownership & eco-care (BRSR Principle 6)
Others	Stronger brand & stakeholder trust (SDG 9, BRSR Principle 1)	Transparency with regulators/investors (BRSR Principle 7, 8)	Industry benchmark in circular economy (SDG 12, BRSR Principle 6)
SDG Icon Details	 	 	

*Note:- PD- Paddle Dryer

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Biomass Boiler Conversion

Retrofittable, scalable across pharma.

Impact: ~ 24,000tCO₂e/yr
-Efficiency 79-82%.
- ₹42 L savings.(0.7-Years)

Next: Rollout to other sites, biomass sourcing tie-ups.

**165 kWp Rooftop Solar Plant**

Modular, scalable, strong payback.

Impact: -359 MW generated
-269 tCO₂ avoided
- ₹29 L saved.(2.4-Years)

Next: Expand capacity, add storage, net-metering.

**Sludge Moisture Reduction by PD**

Converts waste → AFRF; reduces waste disposal by Paddle Dryer (PD)

Impact: -Moisture 70%→15%
-Disposal 3,577→946 T
- ₹197 L saved.(2.3-Years)

Next: Replicate across ZLD plants, cement co-processing.



*Note:- PD- Paddle Dryer

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**Biomass Boiler Conversion****STEPS INITIATED**

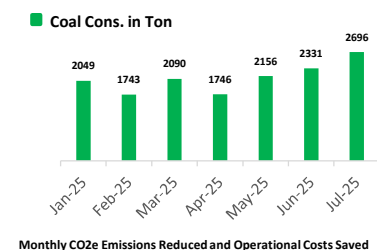
16 TPH Coal boiler to biomass briquette fuel; aligned with CPCB norms.

ACHIEVEMENT SHARING

Demo visits, industry forums, award platforms.

KNOWLEDGE PLATFORMS

Sustainability conferences, pharma energy networks, case study publications

Monthly CO₂e Emissions Reduced and Operational Costs Saved**165 kWp Rooftop Solar Plant****STEPS INITIATED**

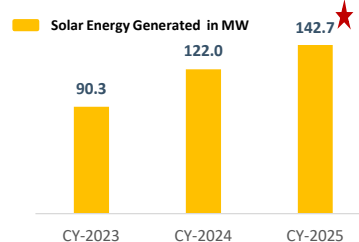
Commissioned rooftop solar (2023-24), optimized 3-inverters operations, real-time monitoring, 350 PV panels.

ACHIEVEMENT SHARING

ESG reports, green energy forums, cross-industry demo.

KNOWLEDGE PLATFORMS

MNRE platforms, renewable energy seminars, clean-tech exhibitions



*Note:- CY-25 & FY-25 Data up to July-2025

**Sludge Moisture Reduction by PD*****STEPS INITIATED**

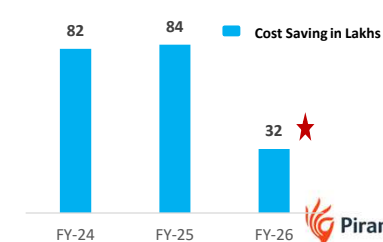
Installed sludge dryer; reduced moisture 70% → 15%; enabled cement co-processing.

ACHIEVEMENT SHARING

Technical demos at ZLD sites, environmental seminars

KNOWLEDGE PLATFORMS

SPCB/CPCB workshops, waste-to-energy forums, sustainability journals



*Note:- PD- Paddle Dryer



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TECHNICAL CHALLENGES

Biomass Boiler

Variability in fuel quality & tuning → Standardization & efficiency monitoring → 82%

Solar Plant

Inverter calibration & grid sync → Real-time monitoring & preventive calibration

Paddle Dryer

Sludge drying consistency → Indirect steam heating & 24/7 operation



ADMINISTRATIVE CHALLENGES

Biomass Boiler

Vendor tie-ups & supply assurance → Long-term contracts & local sourcing.

Solar Plant

MNRE/DISCOM approvals → Early engagement & net metering approvals.

Paddle Dryer

Consent conditions for sludge → SPCB/CPCB alignment



MAINTENANCE CHALLENGES

Biomass Boiler

Ash handling & combustion → Cleaning, automation & training.

Solar Plant

Panel dusting & seasonal drop → O&M contracts & scheduled cleaning.

Paddle Dryer

Paddle wear & steam demand → Preventive maintenance & spare stock



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Environmental Performance vs Industry

Company Position	CO ₂ Reduction (tons/year)	Energy Efficiency Improvement	Water/Waste Management	Performance
PIRAMAL PHARMA	~24,269	Solar Energy	ZLD + Sludge Dryer	Exceeds

Financial Performance vs Benchmarks

Parameter	Industry Benchmark	Piramal Achievement	Performance Status
Annual OPEX Savings	₹40-60 L	₹42 L + ₹29 L + ₹197 L	Exceeds
Boiler Efficiency	82-85%	82%	Sensibly
Solar Generation	4-5 kWh/kWp/day	5.1 kWh/kWp/day	Exceeds
Sludge Reduction	40-50%	74%	Exceeds
System Reliability	95-98%	100% (Zero Alarms)	Exceeds

MEN Piramal:

- Specialized biomass training
- Solar O&M expertise
- Sludge handling vs basic waste management

TECHNOLOGY Advanced Systems:

- Biomass auto-feeding
- Grid-tied solar inverters
- Paddle dryer with steam-auto

MATERIAL Industry Leading:

- High-CV biomass (>3000 kcal)
- Tier-1 solar panels
- Dried sludge as AFRF vs conventional fuels

MEASUREMENT Data-Driven:

- Monthly CO₂ tracking
- Daily generation logs
- Real-time efficiency vs annual estimates only

METHODS Best Practice:

- Real-time monitoring
- Preventive maintenance
- 24/7 operations

National Action Plan for Climate Change (NAPCC)

MNRE (Ministry of New and Renewable Energy)

Business Responsibility and Sustainability Reporting (BRSR)

COMPLIANCE WITH NATIONAL STANDARDS & FRAMEWORKS

MNRE Solar Standards

BRSR Framework

NAPCC Guidelines

HWM Guidelines 2016

Co-processing Guidelines

CPCB Emission Norms

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Scale Renewable Energy

– Expand biomass & solar adoption across facilities.

Enhance Efficiency

– Continuous improvement in boiler, solar, and sludge drying performance.

Optimize Resource Use

– Maximize coal savings, water reuse, and sludge-to-fuel conversion.

Strengthen Circular Economy

– Promote co-processing & by-product utilization across supply chains.

Embed Climate Action

– Align with Scope 1 & 2 emission reduction targets and SDG 13.

Ensure Compliance Excellence

– Exceed CPCB/SPCB norms on air, water, and waste consistently.

Drive Cost Leadership

– Target sustained OPEX savings (₹6–8 lakhs/month per project).

Leverage Digital Monitoring

– Real-time dashboards for energy, emissions, and waste metrics.

Replicate & Scale

– Standardize models for industry-wide adoption in pharma and beyond.

Build Green Culture

– Train employees, engage suppliers, and recognize sustainability champions

**Top 10
Best
Practices –
Core
Approach
(+1 & +2
Years)**



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TECHNICAL INSIGHTS

BIOMASS BOILER

Fuel quality standardization is critical - implementing monitoring systems improved efficiency from 79% to 82%

SOLAR PLANT

Real-time monitoring and preventive calibration prevent inverter issues and ensure consistent grid synchronization

PADDLE DRYER

Indirect steam heating provides consistent sludge drying (70% to 15% moisture) enabling 24/7 operation



OPERATIONAL INSIGHTS

BIOMASS BOILER

Long-term vendor contracts and local sourcing ensure reliable biomass supply and reduce logistics risks

SOLAR PLANT

Early regulatory engagement with MNRE/DISCOM accelerates approvals and net metering implementation

PADDLE DRYER

SPCB/CPCB alignment on consent conditions prevents compliance issues and ensures smooth operations



STRATEGIC INSIGHTS

BIOMASS BOILER

Automated ash handling systems and comprehensive training reduce maintenance burden and operational downtime.

SOLAR PLANT

Structured O&M contracts with scheduled cleaning protocols maintain optimal panel performance year-round

PADDLE DRYER

Preventive maintenance schedules and adequate spare stock ensure minimal downtime and consistent performance

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The collage consists of 17 individual photographs arranged in a grid-like fashion. The photos depict:

- A wide view of a large green lawn with trees in the background.
- A stone statue of a seated figure surrounded by plants.
- A group of people in white uniforms standing in a circle on a dirt area.
- A dense forest or wooded area.
- An aerial view of industrial buildings with blue roofs nestled among trees.
- A garden path lined with yellow flowers.
- A group of people in white uniforms standing in a row.
- A garden with colorful flowers and a small fountain.
- A group of people in white uniforms standing in a row.
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16 | PrarambaPharmaLimited | Sustainability Report 2024-25

Digital India

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- ✓ 35% green belt maintained with 15,000+ trees.
- ✓ 500 trees planted annually on WED, 90% survival rate.
- ✓ Drip irrigation implemented across the site.
- ✓ Continuous green cover enhancement ensured.

