



CENTRE FOR REGIONAL
POLICY & DIALOGUE



The IGCEP: Khyber Pakhtunkhwa and the Politics of Power

*Who Plans Pakistan's Energy Future
and Who Pays the Price?*

A POLICY REVIEW



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The IGCEP: Khyber Pakhtunkhwa and the Politics of Power

Policy Review

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About CRPD:

The Centre for Regional Policy & Dialogue (CRPD) is an Islamabad-based, non-governmental research and policy institution, dedicated to policy analysis, governance reform, democratization, and civil society. CRPD leads research and policy advocacy on Pakistan's energy transition, particularly in Khyber Pakhtunkhwa, advancing renewable energy, solar power, decentralization and a just, low-carbon transition. CRPD strengthens cross-border civic networks, advances inclusive governance, and promotes sustainable peace in the borderlands, focusing on the Pakistan–Afghanistan borderlands.

I. The Document Nobody Reads Until It's Too Late

Energy planning rarely makes headlines. It is the domain of engineers, regulators, and economists, a world of capacity projections, discount rates, and generation-mix charts. Most citizens encounter it only indirectly: when electricity bills spike, when load-shedding returns, or when a new dam displaces their neighbors.

Yet inside those technical documents, consequential decisions are made about which provinces receive investment and which are bypassed, which communities bear the costs of the country's development, and what kind of energy system Pakistan will inherit for the next ten to twenty years. One such document is the **Indicative Generation Capacity Expansion Plan (IGCEP)**. Today, Khyber Pakhtunkhwa is in direct confrontation with it and the confrontation exposes a deeper question this paper takes up: not merely whether two hydropower projects were treated fairly, but what a province that generates a large share of the country's hydro power, yet consumes the least of it per head, should actually build next.

II. What Is the IGCEP? Origins, Structure, and Purpose

What It Is

The IGCEP is Pakistan's long-term electricity generation planning framework, prepared by the **National Transmission and Dispatch Company (NTDC)** whose system-operator functions have now passed to the **Independent System and Market Operator (ISMO)** and submitted annually to the **National Electric Power Regulatory Authority (NEPRA)** for review and approval. Its central question is deceptively simple: what power plants should Pakistan build over the next ten years, and in what order?

Introduced in 2018, the IGCEP was meant to replace decades of ad-hoc, politically driven project approvals with a formal, evidence-based process. Analysts have described it as marking a shift *from ad-hocism to structured, least-cost planning*. But critics point out that the plan has repeatedly broken its own rules, a charge that sits at the center of Khyber Pakhtunkhwa's case.¹

How It Works

The IGCEP runs on a least-cost planning methodology. Candidate projects are ranked using the Levelized Cost of Electricity (LCOE), a single number intended to capture the full lifetime cost of generating one unit of power from a given plant. Projects that appear cheapest, relative to alternatives, are prioritized for inclusion. The plan is updated annually and folds in:

- Demand projections across low, medium, and high economic-growth scenarios;
- Existing and under-construction generation capacity;
- Local and imported fuel-price assumptions;
- Technology cost trajectories and transmission constraints;
- Government policy priorities and international commitments.

Projects are then sorted into categories. "Committed projects"; those already under construction or meeting specific financing and approval criteria, are protected from least-cost elimination. Every other candidate must justify inclusion on economic merit. As Section IV shows, the definition and application of "committed" status is precisely where the Khyber Pakhtunkhwa dispute turns.

The Latest Version: IGCEP 2025–35

¹Renewables First / PREC–ACJCE consultative dialogue, 2025; see also The Nation, "Experts call for inclusive, transparent reforms in Pakistan's power sector planning," 27 September 2025.

The IGCEP 2025–35, approved in 2025, was presented by the Power Division as a significant shift toward affordable electricity, transparency, and long-term sustainability.² Official figures project installed capacity rising roughly 49%, from about 43,069 MW in 2024 to 64,035 MW by 2035.³ Delivering this, together with the companion Transmission System Expansion Plan (TSEP 2025–35), is estimated to require over USD 50 billion across the decade. Headline features include:

- Elimination of roughly 7,967 MW of high-cost “non-essential” projects, claimed to save about USD 17 billion and cut per-unit cost by Rs 4.96;⁴
- A projected decline in natural-gas and furnace-oil capacity (by 2,147 MW and 430 MW respectively), signaling a gradual fossil phase-down;⁵
- Emphasis on indigenous resources; hydro, solar, wind, and nuclear; to cut dependence on imported coal and RLNG;
- First-time integration of K-Electric into national planning and inclusion of battery storage for grid flexibility;⁶
- A projection that hydro and renewables together deliver more than 61% of capacity by 2035.⁷

The plan also ends sovereign guarantees and direct power-purchase commitments for new projects, a structural change intended to curb the capacity-payment burden that has weighed on Pakistan’s power economy. Three themes run beneath the technical detail: cost discipline, indigenization, and a stated transition to renewables. Critics argue these themes mask a deeper problem and that the province at the center of this paper is where the problem becomes visible.

III. The Flaws Behind the Framework

A One-Dimensional Model

The recurring critique of successive IGCEPs is that they have violated their own foundational principles.⁸ The deeper objection targets LCOE itself. Because LCOE compresses an entire power system into a single number, it is highly sensitive to financing assumptions: a modest change in the assumed interest rate can make one project look cheaper than another purely because of how it is financed, not how it performs. In Pakistan, where financing terms differ sharply between federal and provincial projects, this is not a technicality, it is a lever that can quietly disadvantage provincial schemes.⁹

The IEEFA reached a blunt verdict: by slashing wind and solar, the cheapest sources of new generation in Pakistan, the revised plan cannot honestly be called least-cost.¹⁰

The Demand Problem

Pakistan’s crisis is not primarily one of insufficient generation. It is one of under-utilized assets, unaffordable tariffs, and demand that is not growing fast enough. A large share of installed capacity already sits idle for much of the year, yet the framework keeps planning new additions.¹¹ The country spends on the order of

²Power Division spokesperson, quoted in Profit by Pakistan Today, 30 September 2025.

³Business Recorder, 30 August 2025.

⁴Power Division, Profit by Pakistan Today, 30 September 2025.

⁵Pakistan NDC 3.0, UNFCCC submission, 23 September 2025.

⁶Dawn, “Pakistan’s power planning — discipline or debt,” 27 October 2025.

⁷Dawn, 27 October 2025.

⁸The Nation, 27 September 2025.

⁹Business Recorder, “IGCEP and the illusion of long-term planning,” 10 July 2025; SDPI commentary, July 2025.

¹⁰IEEFA, Pakistan’s New Long-Term Power Plan — One Step Forward, Two Steps Back, 2025.

¹¹SDPI, 2025; PIDE, Power Sector Debt and Pakistan’s Economy, Working Paper 2024:2.

USD 17 billion a year on energy imports while roughly 50 million people still lack grid electricity, an indictment of a system that has prioritized generation over access.¹²

The Equity Gap

PIDE has repeatedly argued that energy planning cannot be divorced from regional equity, estimating a welfare loss of around PKR 1,042 for every hour of load-shedding, costs borne disproportionately by provinces with weak distribution infrastructure, regardless of how much generation sits within their borders.¹³ NEPRA itself, reviewing the IGCEP 2025–35, asked pointedly why already-committed or optimized provincial-government projects had not been duly considered; the regulator, in effect, questioning the fairness of the plan it was asked to approve.¹⁴

IV. Khyber Pakhtunkhwa’s Case: Anatomy of the Dispute

A Province That Generates but Does Not Receive

Khyber Pakhtunkhwa’s position in Pakistan’s electricity system is defined by contradiction. The province hosts some of the country’s most consequential generation infrastructure. Tarbela Dam, one of the world’s largest earth-filled dams, has anchored the central grid from the Indus in Khyber Pakhtunkhwa since 1976. Warsak Dam on the Kabul River near Peshawar adds 240 MW. The under-construction Dasu project in Kohistan, planned at 4,320 MW, is among the largest infrastructure investments in the country’s history; Mohmand Dam and the Tarbela extensions sit within or directly affect the province.

Yet despite standing at the infrastructural heart of Pakistan’s hydropower system, much of Khyber Pakhtunkhwa endures extended daily load-shedding, weak distribution networks, high transmission losses, and limited industrial electricity access. The province records the lowest per-capita electricity consumption of any province, even as only about a fifth of its hydropower potential has been developed.¹⁵ CRPD frames this as the core problem of energy equity: the province contributes enormously to the country’s generation but does not receive proportional energy security in return.

The Madyan and Gabral-Kalam Dispute: The Facts

The immediate flashpoint concerns two hydropower projects developed by the Pakhtunkhwa Energy Development Organization (PEDO) under the World Bank–financed Khyber Pakhtunkhwa Hydropower and Renewable Energy (KHRE) Development Program:

- Madyan Hydropower Project: a run-of-river scheme on the Swat River, tendered at up to 207 MW (earlier design 157 MW), District Swat;¹⁶
- Gabral-Kalam Hydropower Project: an 88 MW run-of-river scheme on the Gabral River near Kalam, expected to generate about 339 GWh a year, District Swat.¹⁷

Both were previously classified as “committed projects” in IGCEP 2021–30 and IGCEP 2022–31; a protected status confirmed by formal NEPRA acknowledgement. Both had secured ECNEC approval on 1 October 2020 and concessional international financing before the March 2021 cut-off; the two criteria the Council of Common Interests (CCI) set in September 2021 for mandatory IGCEP inclusion. The financing

¹²PIDE, 2024.

¹³PIDE, Working Paper 2024:2.

¹⁴Business Recorder, “NEPRA raises questions on IGCEP 2025–35.”

¹⁵World Bank, Project Appraisal Document, Khyber Pakhtunkhwa Hydropower and Renewable Energy Development (Report No. PAD3508), 2020 — noting KP has the lowest per-capita electricity consumption among the provinces and that roughly 20% of its hydropower potential has been realised.

¹⁶PEDO tender documentation; Hydropower & Dams International, 12 April 2023 — 207 MW run-of-river, World Bank–funded under KHRE.

¹⁷World Bank, KHRE Program documentation, 2024 — 88 MW run-of-river, ~339 GWh/year, USD 182 million.

package stands at roughly USD 727 million, drawn from World Bank IDA credit (34.4%), IBRD loan (27.5%), the Government of Khyber Pakhtunkhwa (12.7%), and commercial banks.¹⁸ Their removal from IGCEP 2025–35, the provincial government argues, was carried out without due process, notice, or hearing; PEDO’s legal submission calls it “unlawful and arbitrary.”

The Constitutional Argument

At a NEPRA public hearing, Barrister Asghar Khan argued that the CCI’s September 2021 decision gave the IGCEP binding constitutional force under Article 154(7), limiting regulatory discretion; so, removing previously committed projects breaches the constitutional framework.¹⁹ PEDO took the matter to the Islamabad High Court, which admitted the petition and issued notices to the federal government, ISMO, and NEPRA. The challenge rests on the claim that committed-project status, once granted under CCI criteria, cannot be withdrawn retroactively.²⁰

The Double Standard

The most politically charged dimension is the disparity in treatment between federal and provincial projects. Federal schemes; Mohmand Dam, Dasu, Tarbela Extension-5; retained committed status in the draft plan, while Khyber Pakhtunkhwa’s Madyan and Gabral-Kalam were excluded, which the province characterizes as discriminatory.²¹ Provincial officials described the exclusion as “unfair,” “discriminatory,” and “retaliatory.”²² At a Senate Standing Committee on Power session chaired by Senator Mohsin Aziz, described as a heated debate, it was argued that both projects had already been listed as committed under the CCI 2021 criteria and protected under the National Electricity Plan 2023–27.²³

V. What Khyber Pakhtunkhwa Actually Has: The Resource Conditions

Any serious argument about what Khyber Pakhtunkhwa should build, and what it is owed, has to begin with the province’s physical resource base. Two facts dominate, and they point in different geographic directions. The province is Pakistan’s hydropower heartland, but its solar resource is strong only in specific zones. Getting this distinction right is what separates a credible provincial energy strategy from a slogan.

Hydropower: The Province’s Defining Resource

Khyber Pakhtunkhwa’s topography; high heads, steep tributaries, and the Indus, Swat, Kunhar, Panjkora, and Kabul River systems; makes it the natural center of Pakistani hydropower. Of Pakistan’s roughly 60,000 MW of identified hydropower potential, an estimated 30,000 MW lies in Khyber Pakhtunkhwa alone, half the country’s total, yet on the country level only about 16% of identified potential has been harnessed, and within the province only around a fifth.²⁴ PEDO, the provincial power authority created in 1986 as the Sarhad Hydel Development Organization and reconstituted in 2014, estimates the province could ultimately generate on the order of 30,000 MW and has structured its Hydropower Policy 2016 to attract public, private, and public-private investment.²⁵

¹⁸Profit by Pakistan Today, 10 March 2025.

¹⁹Business Recorder, “IGCEP breaches constitutional provisions: KP,” May 2025.

²⁰Business Recorder and Bloom Pakistan, May 2025.

²¹Dawn, 2 July 2025; Business Recorder, 14 July 2025.

²²The Nation, 3 July 2025.

²³Engineering Post, 23 August 2025.

²⁴Asian Development Bank, Balakot Hydropower Development Project (RRP PAK 49055-007) — “Despite its 100 GW recognized and 60 GW identified hydropower potential (30 GW of which is located in KPK Province), only 9,825 MW (16%) has been harnessed”; World Bank PAD3508 (2020).

²⁵PEDO, Introduction, and KP Hydropower Policy 2016.

This is not merely paper potential. Under the Hydropower Policy 2016 and the ADB/World Bank programs, the province is targeting roughly 4,903 MW of additional capacity over 2020–2035 at an estimated cost near USD 11 billion, and it has begun delivering: in 2025 PEDO commissioned three projects totaling 63 MW, the 40.8 MW Koto (Dir), 11.8 MW Karora (Shangla), and 10.2 MW Jabori (Mansihra), with roughly 700 MW more under construction across seven projects, and the 300 MW Balakot scheme on the Kunhar (Mansehra) financed by the ADB.²⁶ The strategic implication is straightforward: for the mountainous north and center of the province; Kohistan, Swat, Dir, Chitral, Mansehra, Shangla; hydropower, not solar, is the resource with genuine scale. This is exactly the corridor in which Madyan and Gabral-Kalam sit, which is why their exclusion is felt not as an isolated planning decision but as a challenge to the province’s core comparative advantage.

Solar: Real, but Geographically Uneven

It is tempting to present solar as a universal answer for Khyber Pakhtunkhwa. The resource data counsels more precision. The World Bank’s solar resource assessment for Pakistan puts the country’s mean Global Horizontal Irradiance (GHI) at about 2,071 kWh/m² per year, with the strongest resource in Sindh, Balochistan, and southern Punjab; and the weakest in the northern regions and Khyber Pakhtunkhwa.²⁷ That is a real constraint for the high mountain valleys, where terrain shading, cloud cover, and winter snow depress yields, the same valleys where hydropower is strongest.

But the province is not uniform. Its southern and central plains; Peshawar, Mardan, Nowshera, Kohat, Bannu, and Dera Ismail Khan; receive daily solar radiation broadly in the 4.5–5.5 kWh/m² range, comfortably viable for photovoltaic generation.²⁸ A 2025 geospatial siting study of three Khyber Pakhtunkhwa districts found large suitable areas for PV; about 860 km² in Peshawar, 828 km² in Mardan, and 503 km² in Nowshera; with correspondingly large modelled generation and CO₂-avoidance potential, confirming that the plains, not the peaks, are the province’s solar frontier.²⁹

A geographic division of labour

Zone	Districts (illustrative)	Primary resource	Best-fit technology
Northern / mountain	Kohistan, Swat, Dir, Chitral, Mansehra, Shangla	High-head hydro; weak solar	Run-of-river & storage hydro
Central / southern plains	Peshawar, Mardan, Nowshera, Kohat, Bannu, D.I. Khan	Good solar ($\approx 4.5\text{--}5.5$ kWh/m ² /day)	Utility & distributed solar PV + storage
Merged districts	Ex-FATA agencies	Off-grid solar; small hydro	Community solar, microgrids

Sources: World Bank/ESMAP Solar Modeling Report (2015); ADB Balakot RRP; Scientific Reports (2025). Zonal boundaries are indicative.

The policy consequence is not “hydro versus solar” but sequencing by geography: defend and build the province’s large hydro pipeline in the north (which is what the IGCEP dispute is really about), while moving aggressively on distributed and utility-scale solar in the plains and on off-grid solar in the merged districts, where extending the transmission grid is slowest and costliest. A provincial strategy that conflates the two zones; promising rooftop solar as a substitute for excluded mountain hydro; would misread its own resource base.

²⁶ADB, Balakot Economic Analysis (49055-007); Pediastan / KP Energy & Power Department, September 2025; ADB, project 49055-007.

²⁷World Bank / ESMAP, Solar Resource Mapping in Pakistan: Solar Modeling Report, March 2015 — national annual mean GHI $\approx 2,071$ kWh/m²; lowest sums estimated for the Northern Regions and Khyber Pakhtunkhwa.

²⁸Surface-measured solar radiation review, Pakistan (daily GHI ranging $\approx 4.68\text{--}5.54$ kWh/m²/day; annual $\approx 1,900\text{--}2,200$ kWh/m²); D.I. Khan district-level survey data.

²⁹Nuthammachot & Shabbir, “Evaluating site selection for optimal photovoltaic installations ... in selected districts of Khyber Pakhtunkhwa,” Scientific Reports 15 (2025), DOI 10.1038/s41598-025-86713-5.

VI. Extraction Without Compensation: The Net Hydel Profit Dispute

If the Madyan–Gabral–Kalam exclusion is the acute grievance, the Net Hydel Profit (NHP) dispute is the chronic one; and it is the hard evidence behind the province’s claim that it generates the country’s power without receiving its due. This is not rhetoric; it is a four-decade constitutional and accounting dispute with specific, documented figures.

Article 161(2) of the Constitution is unambiguous: the net profit from bulk generation at a hydro-electric station “shall be paid to the province in which the hydro-electric station is situated,” at a rate the Council of Common Interests determines.³⁰ To operationalize this, a committee under A.G.N. Kazi (then Deputy Chairman, Planning Commission) devised the Kazi Committee Methodology (KCM), which computes net profit backward from what consumers pay, deducting transmission and distribution costs, and bars offsetting one station’s loss against another’s profit. The CCI endorsed the KCM in January 1991; the first payment of Rs 6 billion reached the then-NWFP in 1992, and the Supreme Court and NFC affirmed the methodology in 1997.³¹

The dispute is over whether the federal government has actually paid what the formula requires. A 2005 arbitration tribunal awarded roughly Rs 110 billion in arrears for FY1991–FY2005; a 2016 MoU released about Rs 70 billion and “uncapped” the annual share from Rs 6 billion to Rs 18 billion.³² Then, in December 2019, a CCI-endorsed committee under the Deputy Chairman of the Planning Commission (the Jehanzeb Khan committee) verified that Khyber Pakhtunkhwa was owed Rs 128 billion for the single financial year 2016–17 under the Kazi formula.³³ Applied across 2016–17 to 2022–23, the provincial claim under the Kazi methodology runs to roughly Rs 1.5 trillion, the figure over which an inter-provincial “out-of-the-box” committee has repeatedly failed to agree.³⁴

The pattern is what matters for this paper. The province supplies a large share of the country’s cheapest, cleanest power; the Constitution entitles it to the net profit from that power; the federation acknowledges the debt through its own committees, then defers payment for years. Set against that backdrop, the removal of two committed provincial hydropower projects from the IGCEP is not an isolated technical event. It reads, to Khyber Pakhtunkhwa, as the latest instalment in a long ledger of extraction without full compensation.

What the Province Is Already Doing

Crucially, Khyber Pakhtunkhwa is not waiting passively. Recognizing both the load-shedding crisis and the solar opportunity in its plains, the provincial government launched a flagship Solarization of Houses Initiative in November 2024, aiming to solarize 130,000 low-income households; 65,000 fully free and 65,000 on a 50% cost-share, including about 30,000 homes in the merged districts, with distribution by transparent electronic balloting. The response was extraordinary: over 2.5 million online applications for the first tranche.³⁵ A parallel program targets roughly 13,000 public buildings; hospitals, schools, colleges,

³⁰Constitution of Pakistan, Article 161(2); text reproduced in Dawn, 12 December 2018.

³¹Inayatullah, “Net hydel profit: the case of KP,” The News, 29 July 2020; Business Recorder, 3 April 2025.

³²Dawn, 12 December 2018; The News, 29 July 2020.

³³Business Recorder, “KP formally takes up NHP dues issue with PM,” 3 April 2025; KP Energy & Power Department statement, 2 April 2025.

³⁴Dawn, “KP asks Centre to release over Rs71 billion net hydel profit,” 2 September 2025.

³⁵Dawn, “Project launched to provide solar energy solutions to deserving families,” 7 March 2025; The Express Tribune, 7 March 2025; PEDO.

police stations, prisons; with combined provincial commitments reported around Rs 20–55 billion across the household and public-building components.³⁶

The province has also become the first to lay its own provincial transmission line and continues to press the Matiltan–Madyan / Gorkin–Matiltan evacuation infrastructure needed to bring new hydro to load. In other words, Khyber Pakhtunkhwa is already executing precisely the geographic division of labor Section V describes; hydro in the north, solar in the plains and merged districts; which strengthens, rather than weakens its standing to demand fair federal treatment.

VII. CRPD and TARA: A Green Energy Strategy Built on the Province’s Own Resources

CRPD approaches the IGCEP controversy as both symptom and opportunity. The exclusion of Madyan and Gabral-Kalam exposes a structural bias in national planning; but winning that single battle is not the goal. The strategic question is what energy future Khyber Pakhtunkhwa should build and the answer, grounded in the resource analysis above, is a two-track green strategy: defend and expand indigenous hydro in the north, and drive a rapid, decentralized solar build-out in the plains and merged districts.

1. Provincial Energy Rights and the Governance Question

The exclusion is a legitimate grievance that exposes a system which subordinates provincial projects to federal priorities while presenting the outcome as neutral technical analysis. CRPD argues this governance battle must be fought through the courts, NEPRA hearings, and the CCI, but not mistaken for the whole contestation. The NHP precedent shows that winning acknowledgement is not the same as winning payment; enforceability is the real prize.

2. Solar as the Primary Path in the Plains and Merged Districts

Where the resource supports it, distributed and utility-scale solar is the fastest, most equitable option. Solar has become Pakistan’s single largest electricity source, exceeding a quarter of production in 2025, up from around 4% in 2021, driven by roughly 22 GW of panel imports in 2024 alone.³⁷ For Khyber Pakhtunkhwa’s plains and off-grid merged districts, distributed solar offers rapid deployment without long planning horizons, no land acquisition or displacement, independence from long transmission runs to distant load centers, and resilience against grid failure. The province’s own 130,000-house program is proof of both demand and deliverability; the task now is to scale it and target it to the high-irradiance zones the data identifies. Moreover, the challenges to implementation of the province’s own 130,000-house program should be overcome with diligence and rational strategy.

4. Battery Energy Storage Systems (BESS)

Solar’s intermittency; the historic justification for centralized generation; is increasingly answerable with storage. Pakistan recorded over 4.1 GWh of installed BESS in January 2025, rising past 7 GWh by mid-year.³⁸ Paired with solar in the plains, BESS lets communities shift daytime generation to evening peak, and paired with run-of-river hydro in the north it can firm seasonal variability, making storage a bridge between the province’s two resource zones rather than a rival to either.

5. Fiscal Relief on Solar and Storage

³⁶The Express Tribune, “K-P to solarise public buildings, households,” 10 November 2024; KP Energy & Power Department.

³⁷Arab News, February 2026; industry import data 2024.

³⁸SDPI, BESS seminar report, 10 September 2025.

Punjab and Sindh have moved on provincial solar subsidies; Punjab offering free modules to low-consumption households, Sindh announcing large subsidies for low-income homes.³⁹ Khyber Pakhtunkhwa's Solarization Initiative is comparable in ambition, but CRPD recommends going further: reducing or eliminating provincial duties and levies on solar and BESS equipment, so that adoption is not confined to middle- and upper-income households and so that the plains program can scale toward its 130,000-home target and beyond.

6. Energy Equity as a Planning Principle

CRPD's most structural proposal is that energy equity become an explicit IGCEP objective, not an afterthought. The current least-cost framework has no mechanism to weigh local access, provincial resilience, or the development needs of communities that still lack reliable power. CRPD proposes an explicit energy-equity index within future IGCEP iterations, assessing not just national generation cost but its distribution across provinces and districts and pairing it with the NHP framework so that provinces hosting generation see measurable local benefits.

7. Real Provincial Participation in IGCEP Formulation

Experts at the September 2025 PREC/ACJCE dialogue concluded that the IGCEP and TSEP must become more inclusive, transparent, and participatory, ensuring ownership by all federating units so that equitable, people-centric planning is possible.⁴⁰ CRPD advocates formalized provincial representation in the planning process itself — not consultation after drafts are finalized.

TARA's Position: The Fossil-Fuel Consistency Test

The TARA Green Energy Initiative situates the dispute within the fossil phase-out. Pakistan's own NDC 3.0 confirms that gas and furnace-oil capacity will decline under IGCEP 2025–35, signaling a gradual fossil phase-down.⁴¹ From TARA's vantage, excluding domestically financed, renewables-based provincial hydro while federal fossil and mega-infrastructure retain protection is not only inequitable, it is inconsistent with Pakistan's stated decarbonization goals. The consistency test is simple: a plan that claims to prioritize indigenous clean power cannot simultaneously strike out the province best positioned to supply it.

³⁹Josh & Mak International, "Law, policy and regulation of solar power in Pakistan," March 2025.

⁴⁰The Nation, 27 September 2025.

⁴¹Pakistan NDC 3.0, UNFCCC, 23 September 2025.

VIII. Legal, Policy, and Legislative Landscape

The Constitutional Structure

Provincial energy rights rest on the 18th Amendment (2010). Article 157 lets provinces build power houses and grid stations, lay transmission lines within the province, and set distribution tariffs and bars the federal government from building new hydroelectric stations in a province without consulting that province.⁴² Article 154(7) gives CCI decisions binding force; PEDO's petition relies on it to argue the September 2021 committed-project criteria cannot be unilaterally overridden by ISMO or NEPRA. Article 161(2), discussed in Section VI, entitles the province to net hydel profit. Together these provisions give Khyber Pakhtunkhwa an unusually strong constitutional footing, the weakness is enforcement, not entitlement.

The PEDO Act 2020 empowers the province to develop renewable projects and distributed energy systems without federal clearance below certain capacity thresholds; the legal basis for the province's own solar programs.

The Net-Metering Reversal

A 2026 regulatory shift cuts against provincial solar ambitions: NEPRA moved to reduce buyback rates for rooftop solar exported to the grid, lowering compensation for new users from roughly Rs 27/unit toward about Rs 10/unit.⁴³ Driven by distribution-company revenue pressure, the change weakens rooftop economics; exactly the centrally imposed policy CRPD warns penalizes provincial solar to protect incumbent grid interests. It also strengthens the case for provincial fiscal relief (Section VII.5) to offset the federal tariff signal.

Reform Levers

- **CCI enforcement.** Legislation clarifying how CCI decisions on committed-project status and NHP are enforced would protect provincial investment from retroactive reversal.
- **Provincial legislation.** The Khyber Pakhtunkhwa Assembly can enact provincial feed-in tariffs, solar subsidy frameworks, and BESS incentives that go beyond NEPRA's central regime.
- **ARE Policy compliance.** The ARE Policy 2019 targets 30% non-hydro renewable capacity by 2030; commentary notes IGCEP 2025–35 falls short, with solar, wind, and bagasse near 27% only by 2035. ⁴⁴Holding the federation to its own target is a legal and advocacy lever.
- **Equal-treatment provisions.** CRPD urges NEPRA to require that committed provincial public-sector projects be evaluated on identical terms as committed federal ones, with any deviation publicly justified.

⁴²Article 157, Constitution of Pakistan; Shahid Hamid, quoted in *Courting the Law*, August 2016.

⁴³Arab News, "Pakistan softens solar policy after backlash," February 2026.

⁴⁴Dawn, 27 October 2025.

IX. The Social and Ecological Ledger of Hydropower

Advocating for the province's hydro pipeline honestly requires naming its costs, the same costs that make the solar track indispensable where the resource allows.

Displacement and the Human Toll

The social cost of large dams in the province is documented. Tarbela displaced about 96,000 people, and resettlement studies find affected communities still felt dislocated decades later.⁴⁵ The Dasu project in Kohistan; a committed federal scheme fully backed by the IGCEP; affects roughly 40 villages and displaces more than 1,000 people, has been rescheduled three times, and lacks an announced resettlement timeline.⁴⁶ For context, Mangla displaced about 81,000 people; both it and Tarbela built before modern social-safeguard standards.

Rivers, Fish, and Forests

Even run-of-river schemes, often marketed as benign, alter downstream hydrology. A study of the Ghazi-Barotha run-of-river project on the Indus found measurable impacts on downstream discharge, groundwater, agricultural land, and vegetation over three decades.⁴⁷ Communities upstream of Tarbela depend on cold-water fish; principally snow carp; for protein and livelihood, and altered flow regimes threaten them.⁴⁸ The Swat valley, where Madyan and Gabral-Kalam sit, holds substantial forest, alpine meadow, and biodiversity tied to natural river hydrology; the Gabral-Kalam ESIA itself identifies impacts on the Gabral tributary requiring mitigation. Cumulative ecological cost must be weighed as this corridor is developed.

The Energy-Justice Question

These costs sharpen the central claim: if the communities of Khyber Pakhtunkhwa bear the displacement, disrupted rivers, and altered landscapes of the country's hydropower, they have a right to its benefits; in reliable local supply, in net hydel profit actually paid, and in a say over what is built. That is the moral logic linking the IGCEP exclusion, the NHP arrears, the case for a locally controlled solar build-out, and Prior and informed consent (or Free, Prior and Informed Consent - FPIC) of the local communities.

⁴⁵Longdom Open Access, "Resettlement in new environment and its impacts on socio-cultural values: Tarbela Dam."

⁴⁶MDPI, Sustainability, "Development-induced displacement and resettlement project-delay impacts," March 2025.

⁴⁷ScienceDirect, "Hydrological and ecological impacts of run-of-river scheme: Ghazi-Barotha," January 2023.

⁴⁸WAPDA / World Bank, Dasu Hydropower Project Environmental and Social Assessment.

X. Conclusion: A Governance Failure, not a Technical One

The IGCEP controversy is not, at bottom, about two hydropower projects. It is about a governance system that subordinates provincial interests to national planning assumptions and then presents the result as neutral, evidence-based technocracy. NEPRA's own questions conceded that provincial projects were not duly considered; the September 2025 expert consensus called for planning owned by all federating units; and the Constitution already entitles the province to both consultation and net hydel profit. The gap is enforcement.

For Khyber Pakhtunkhwa, three tracks should run at once. In the courts and regulatory forums, PEDO's Islamabad High Court petition and NEPRA's hearing process should put the discriminatory treatment of committed provincial projects fully on the record. In the legislature and policy space, the province should legislate provincial solar and BESS incentives independent of federal policy, and elevate CCI-enforcement and NHP settlement to first-order demands. And on the ground, it should scale the solar build-out, already under way, with rational, equitable and decentralized implementation plan targeted to the high-irradiance plains and the off-grid merged districts, while defending its hydropower pipeline in the north.

The province's strength is that the evidence is on its side: 30,000 MW of identified hydro potential, a solar resource strong exactly where the population and industry concentrate, a constitutional entitlement to net profit already verified in the tens and hundreds of billions of rupees, and a solarization program with 2.5 million applicants proving the public high demand. Khyber Pakhtunkhwa has both the resources and the legal authority to begin changing the actual configuration of clean energy access.

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