

Impacts of Competitive Auctions on DISCOs: Managing the Consequences of Market Liberalization under CTBCM



Background

- 1 Pakistan's power sector faces persistent circular debt, rising tariffs, and DISCO inefficiencies.
- 2 ISMO is launching the country's first-ever Wheeling Auctions of 200 MW (Phase-I), with a total of 800 MW allocated for up to 5 years.
- 3 Bulk Power Consumers (BPCs) with a sanctioned load of ≥ 1 MW can purchase electricity directly from competitive suppliers.
- 4 Critical challenge: quantifying the impact on DISCO revenue streams, tariff structures, and cost recovery mechanisms.
- 5 This sandbox provides a proactive platform to design strategies for DISCOs as active market participants under CTBCM.

Objectives of the Sandbox

01

Measure Financial Impact

Quantify the effect of the 200 MW wheeling auction on each DISCO's revenue.

02

Evaluate Scenarios

Model loss and gain scenarios for DISCOs under market liberalization.

03

Assess Tariff Impact

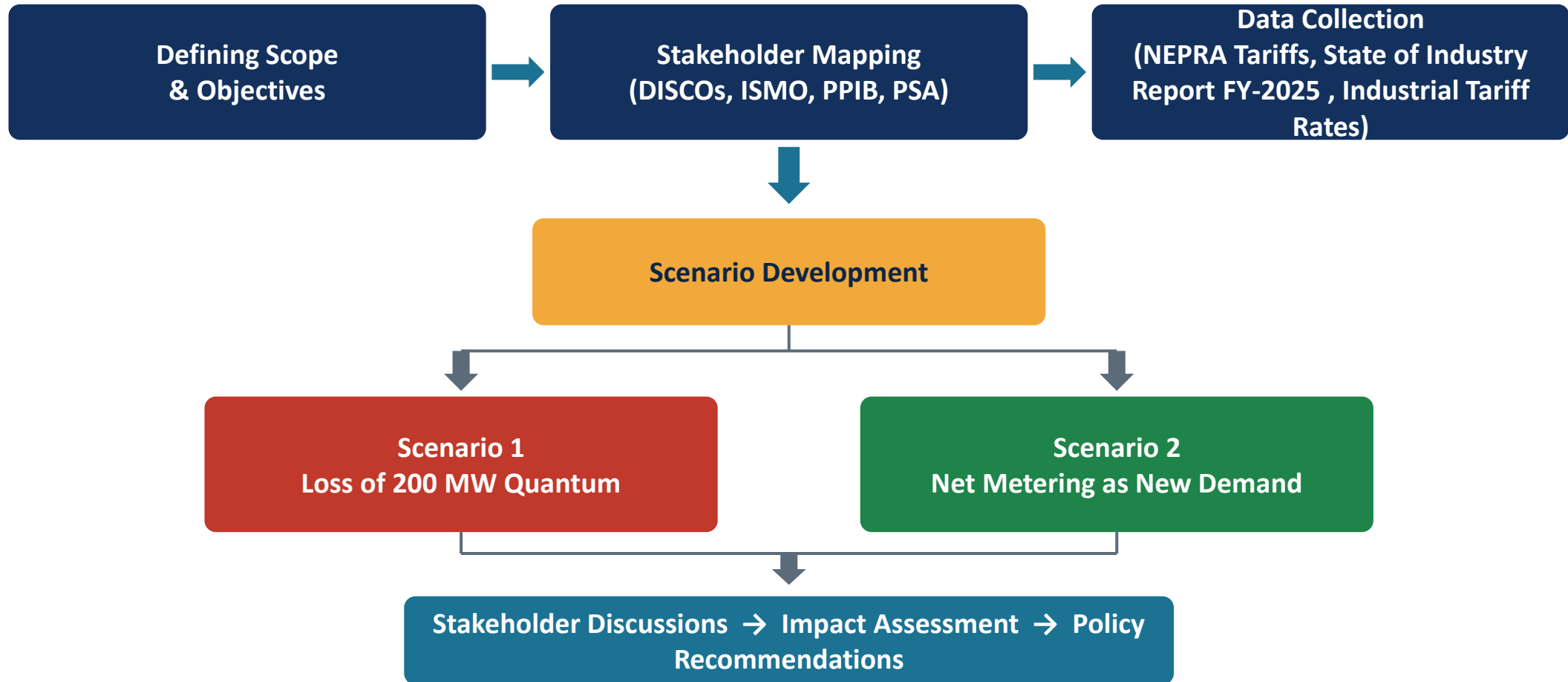
Determine the pass-through effect on end-consumer tariffs.

04

Policy Recommendations

Develop actionable recommendations for regulators and DISCOs.

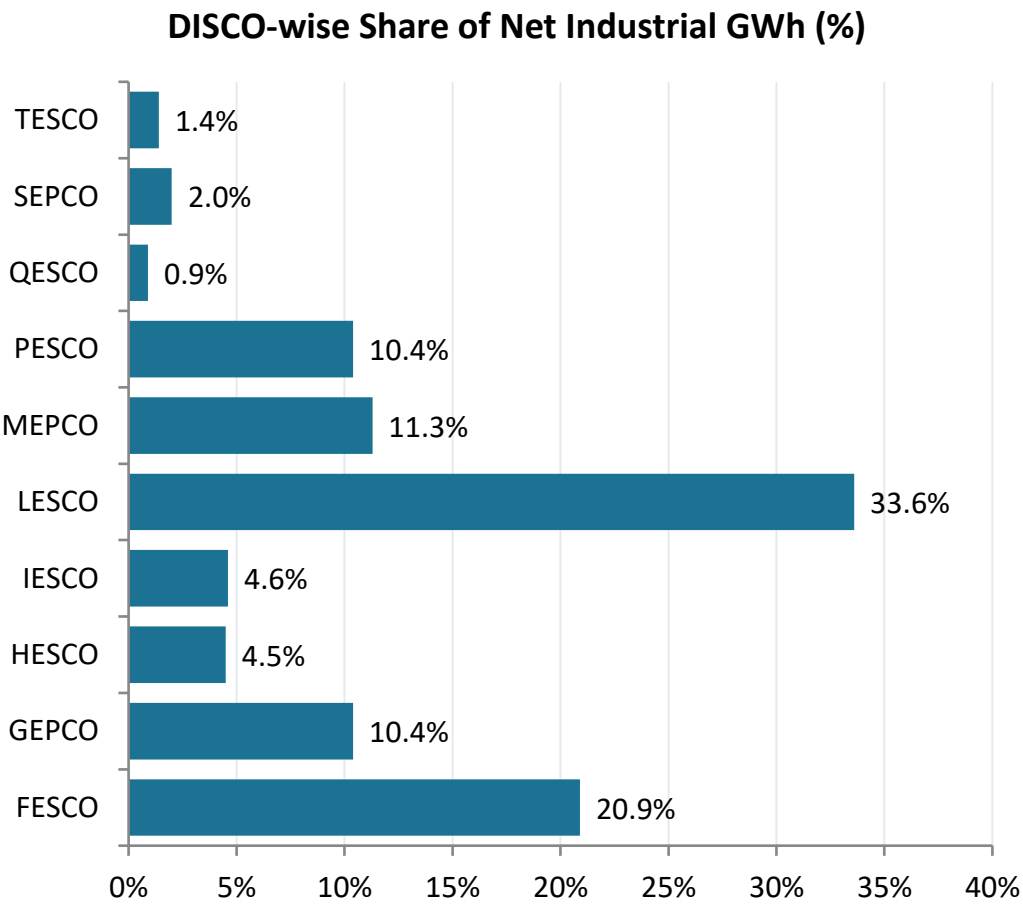
Methodology



DISCO-wise Baseline Data

Table 1: Net Industrial Quantum & Revenue Base (Source: NEPRA Tariff, 2026)

DISCO	Net Industrial Quantum (GWh)	Net Base Revenue (Mln. Rs)	% Share of Net GWh
FESCO	5,278	135,894	20.9%
GEPCO	2,628	75,035	10.4%
HESCO	1,140	42,631	4.5%
IESCO	1,170	32,016	4.6%
LESCO	8,480	211,184	33.6%
MEPCO	2,852	97,438	11.3%
PESCO	2,628	95,810	10.4%
QESCO	232	12,251	0.9%
SEPCO	495	15,887	2.0%
TESCO	345	10,066	1.4%
Total	25,248	714,164	



Key Insight: LESCO has the highest consumption share (33.6%), making it most vulnerable to revenue loss; QESCO has the smallest share (0.9%).

SCENARIO 1

Revenue Loss from the 200 MW Wheeling Auction

Assumptions

- 1 200 MW annualized = 1,752 GWh ($200 \text{ MW} \times 24 \text{ hrs} \times 365 \text{ days} \div 1,000$).
- 2 Reduction allocated proportionally, based on each DISCO's % share of net GWh.
- 3 Average industrial tariff (B1–B4 consumers) used in calculating loss & revenue: Rs. 29.63 / kWh (Source: FESCO, 2026).
- 4 Wheeling Charges rate = 12 Rs. per unit.

1,752 GWh

Annualized wheeling quantum removed from the regulated DISCO system.

Rs. 29.63 per unit

Average industrial tariff (B1–B4) applied to the lost units.

Rs. 12 per unit

Wheeling Charges rate applied in the loss calculation.

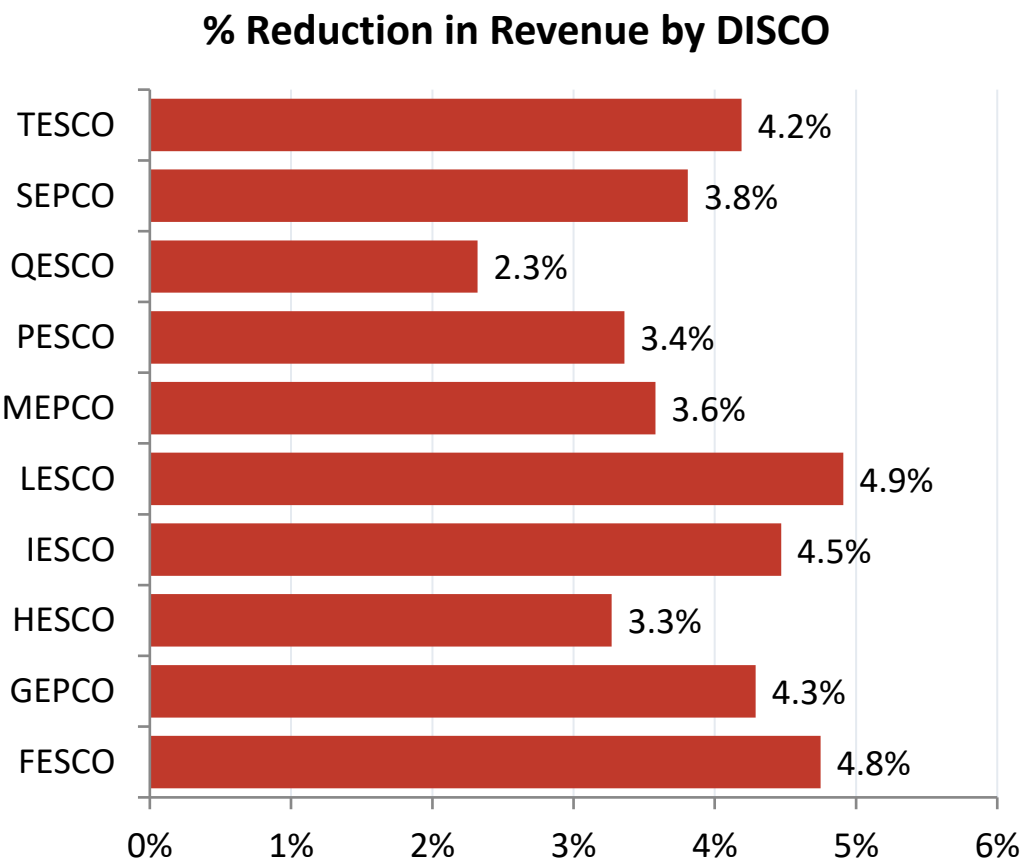
Rs. 17.6 per unit

Revenue Loss per unit.

Scenario 1: Projected Revenue Loss per DISCO

Table 2: Impact of the 200 MW quantum reduction

DISCO	Quantum Reduction (GWh)	DISCO Loss (Mln. Rs)	% Reduction
FESCO	366.2	6,459	4.75%
GEPCO	182.4	3,216	4.29%
HESCO	79.1	1,395	3.27%
IESCO	81.2	1,432	4.47%
LESCO	588.4	10,378	4.91%
MEPCO	197.9	3,490	3.58%
PESCO	182.4	3,216	3.36%
QESCO	16.1	284	2.32%
SEPCO	34.3	606	3.81%
TESCO	23.9	422	4.19%
Total	1,752	30,898	



Key Finding: The aggregate net loss across all DISCOs is approximately Rs. 31 billion, which will be passed through to end-consumer tariffs unless mitigated.

SCENARIO 2

Revenue Gain through Net Metering as New Demand

Rationale

Net metering quantum represents distributed generation capacity that can be aggregated via Virtual Power Plants (VPPs) and offered as new demand in the CTBCM market and effectively offsetting the 200 MW loss from Scenario 1.



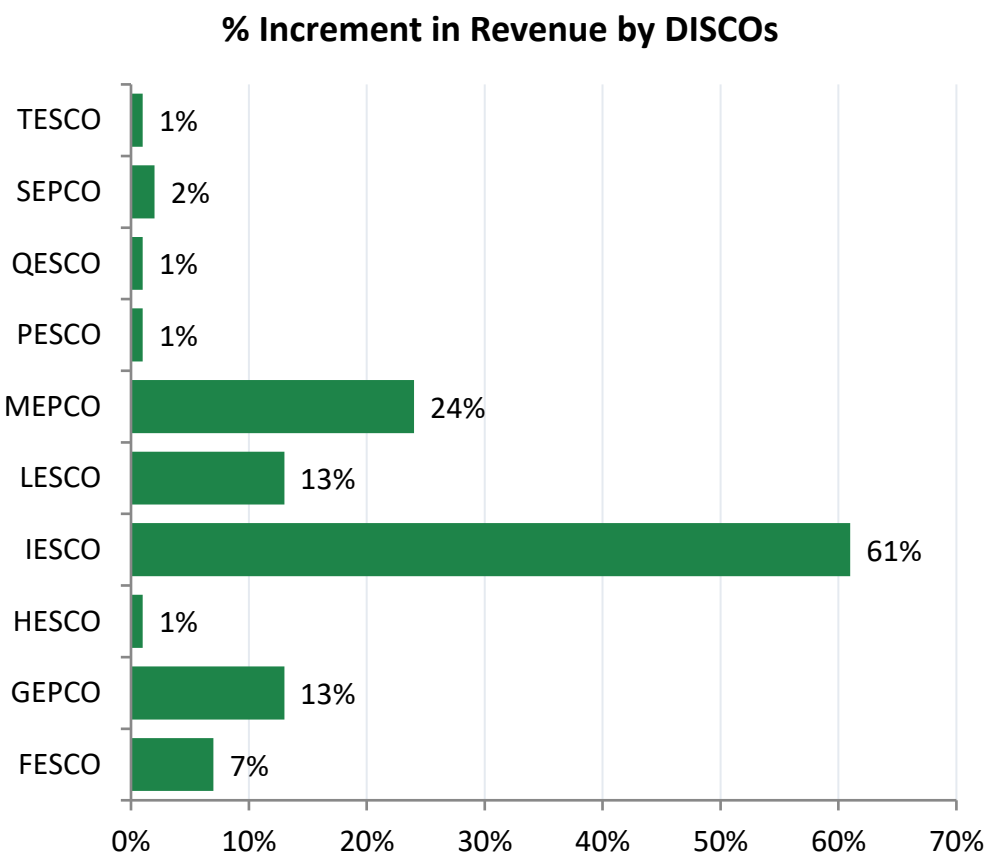
Rs. 93 billion

aggregate net profit potential across all DISCOs, potentially fully offsetting the 200 MW loss

Scenario 2: Projected Revenue Gain from Net Metering

Table 3: Net metering quantum aggregated and offered as CTBCM surplus (Source: State of Industry Report – FY 2025 & Author’s Calculations)

DISCO	Consumers to DISCOs Net Metering Quantum (kWh)	DISCO Net Revenue (Mln. Rs)	% Increment
FESCO	327,042,683	9,692	7%
GEPCO	334,704,614	9,919	13%
HESCO	18,696,275	554	1%
IESCO	653,651,736	19,371	61%
LESCO	977,971,298	28,983	13%
MEPCO	786,694,997	23,314	24%
PESCO	24,639,295	730	1%
QESCO	4,945,093	147	1%
SEPCO	9,126,174	270	2%
TESCO	2,310,177	68	1%
Total	3,139,782,342	93,050	



Key Finding: IESCO dominates with a 61% increment due to highest net-metering adoption. Aggregate net profit potential = Rs. 93 billion across all DISCOs.

End-Consumer Tariff Impact Comparison

Table 4: NEPRA Power Purchase Price Forecast (PPP), CY-2026 (Rs. per unit) & Author's Calculations

PPP Components		Scenario - 0 (Status QUO)	Scenario - 1 (200 MW Loss)	Scenario - 2 (Net Metered)	
Units Sold (billion units)	101.23	101.23	99.48	101.23	
	Billion PKR	Per Unit	Per Unit	Billion PKR	Per Unit
Energy Charge	924	9.12	-	924	9.12
Capacity Charge	1,777	17.56	17.86	1,777	17.56
UoS	222	2.19	2.23	222	2.19
Generation Cost	2,923	28.88	29.38	2,923	28.88
Distribution Margin	414	4.09	4.16	414	4.09
Prior Year Adjustment	72	0.71	0.72	72	0.71
Revenue Requirement	3,409	33.67	34.27	3,409	33.67
Working Capital	-29	-	-	-29	-
Net Metering CTBCM Surplus	-	-	-	-93	-
Final Impact	3,379	33.39	33.98	3,287	32.47

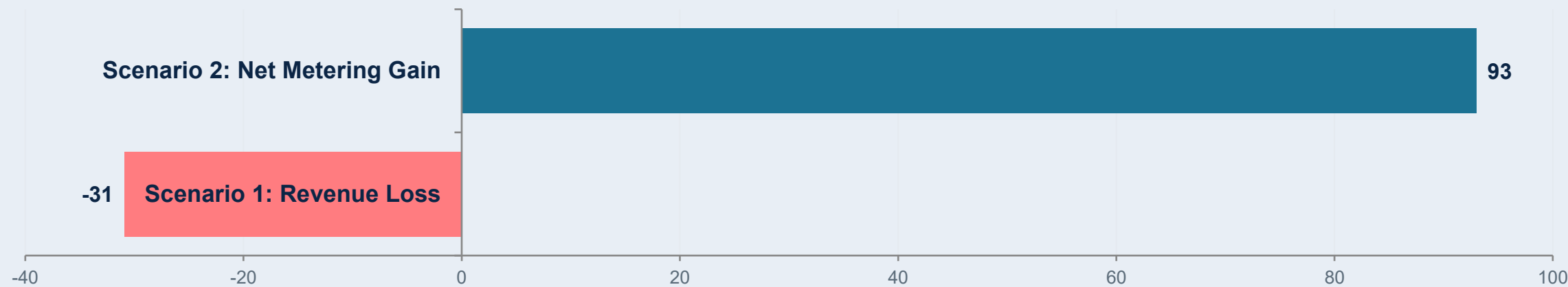
+Rs. 0.5 /unit under Scenario-1 raises the average end-consumer tariff if the 200 MW loss is unmitigated.

-Rs. 0.9 /unit under Scenario-2 lowers the tariff if net-metered CTBCM surplus is utilized as new demand.

Cross Scenario Comparison Summary



Scenario 1 Vs Scenario 2: Aggregate Financial Impact (Rs. Billion)



Policy Recommendations

Establish VPP-led DISCO Revenue Models

- Create VPP units within each DISCO to aggregate net-metering consumers.
- Target a pool of distributed generation for CTBCM bidding.
- Design business models for DISCO and private-sector partnerships.

Phase in Auction Participation

- Monitor DISCO revenue impact for 12 months before scaling to 800 MW.
- Build in safety triggers if aggregate revenue loss exceeds set thresholds.

Create a CTBCM Surplus Market

- Allow DISCOs to bid aggregated net-metering quantum through a third party into CTBCM.
- Develop forecasting models to predict net-metering quantum.

Thank You

Sustainable Development Policy Institute (SDPI)

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