Annexure-II

Demand Forecast (Summary Statement for State)									*Format-1*
Sr. No.	**Particulars**	**Actual of Previous Years**			**Current Year (n)**	**YoY growth rate/CAGR - as applicable (%)**	**Projections**		
		Yr (n-3)	**Yr (n-2)**	**Yr (n-1)**			**Yr (n+1)**	**Yr (n+2)**	**...Yr (n+10)**
1	**Energy Sale - MUs** ***(Consumer Category wise as per Retail Supply Tariff Order)***								
	Domestic								
	Non-Domestic								
	Public Water Works & Street Light								
	Agriculture and Allied Activities								
	LT Industries								
	HT Industries								
	Contracted Load up to 1000 kVA:								
	- Load Factro Upto 50%								
	- Load Factro Above 50%								
	Contracted Load More than 1000 kVA:								
	- Load Factro Upto 50%								
	- Load Factro Above 50%								
	Mixed Load								
	Railway Traction								
	Electric Vehicle Charging Stations								
	Others Category ….....1								
	Others Category ….....2								
	Others Category ….....3								
2	**Total Energy Sale (MU)-** ***(Cumulative of all consumer categories)***								
3	***YoY growth rate for total energy Sales (%)***								
4	Distribution losses - in %								
5	Distribution losses - in MU								
6	**Supply / Requirement at DISCOM Boundary(MU)**								
7	Intra-State Transmission losses - in %								
8	Intra-State Transmission losses - in MU								
9	**Supply / Requirement at State Boundary(MU)**								
10	Inter-State Transmission losses - in %								
11	Inter-State Transmission losses - in MU								
12	**Ex-Bus Requirement of DISCOM (MU)**								
13	*Sale by UPCL to Outside State*								
14	*Energy Wheeled for OA Consumers*								
15	**Ex-Bus Requirement of State (MU)**								
16	**Peak load of DISCOM (MW)**								
17	**Peak load of State (MW)**								
Note:	*1. The Demand Forecast would be supported by Graphs showing yearly Demand Pattern for Consumer Category and wherever possible sample 24hr Load Duration Curve also needs to be provided.*								
	2. The Demand Forecast shall be done in accrdance with Regulation 6 of the UERC (Framework for Resource Adequacy) Regulations, 2026.								
	3. The above format for furnishing information related to Demand Forecasting is subject to change if methodology adopted for Demand Forecasting is other than Partial End Use method (PEUM).								

Monthly Ex-Bus Energy Requirement (MU)							*Format-2*
Month	**Actual of Previous Years**			**Projections**			
	Yr (n-3)	**Yr (n-2)**	**Yr (n-1)**	**Current Year (n)**	**Yr (n+1)**	**Yr (n+2)**	**...Yr (n+10)**
State (DISCOM including OACs)							
Apr							
May							
Jun							
Jul							
Aug							
Sep							
Oct							
Nov							
Dec							
Jan							
Feb							
Mar							
DISCOM							
Apr							
May							
Jun							
Jul							
Aug							
Sep							
Oct							
Nov							
Dec							
Jan							
Feb							
Mar							
Open Access Consumers (OACs)							
Apr							
May							
Jun							
Jul							
Aug							
Sep							
Oct							
Nov							
Dec							
Jan							
Feb							
Mar							

Power Supply Projections						*Format-3*
No.	**Particulars**	**Projections**				
		Yr (n+1)	**Yr (n+2)**	**Yr (n+3)**	**Yr (n+4)**	**...Yr (n+10)**
1	**Ex-Bus Requirement of State (MU)**					
	For DISCOMs (MU)					
	For Sale by UPCL to Outside State					
	For OA (MU)					
2	**Energy Availability (MU)**					
	Uttarakhand State Genco Hydel Plants					
	Uttarakhand State Gas based Plants					
	Central Sector Stations					
	Medium/Long Term tie-ups					
	Other IPPs					
	Solar Generators Availability					
	Availability through PSP					
	Availability through BESS					
	Availability through banking/Power Market					
	Others Sources (If any)					
	TOTAL (MU)					
3	***Surplus(+)/Deficit(-) (MU)***					
4	***Surplus(+)/Deficit(-)(%)***					
Note:	*1. The yearly Energy requirement/Supply should tally with monthly requirement/supply forecast as indicated in Format-2*					
	2. The Power Supply Position would be supported by Graphs showing yearly and Monthly Pattern					

Peak Demand and Availability Projections						*Format-4*
(Peak Hours/Off-Peak Hours)						
No.	**Particulars**	**Projections**				
		Yr (n+1)	**Yr (n+2)**	**Yr (n+3)**	**Yr (n+4)**	**...Yr (n+10)**
1	**Available Generation Capacity (MW)**					
	Uttarakhand State Genco Hydel Plants					
	Uttarakhand State Gas based Plants					
	Central Sector Stations					
	Medium/Long Term tie-ups					
	Other IPPs					
	Solar Generators Availability					
	Availability through PSP					
	Availability through banking/Power Market					
	Others Sources (If any)					
	TOTAL (MW)					
2	**Peak Load of State (MW)**					
3	**Peak Availability (MW)**					
	Uttarakhand State Genco Hydel Plants					
	Uttarakhand State Gas based Plants					
	Central Sector Stations					
	Medium/Long Term tie-ups					
	Other IPPs					
	Solar Generators Availability					
	Availability through PSP					
	Availability through BESS					
	Availability through banking/Power Market					
	Others Sources (If any)					
	TOTAL (MW)					
4	***Surplus(+)/Deficit(-)*** *(MW)*					
5	***Surplus(+)/Deficit(-)*** *(%)*					
Note:	*1. This format is to be submitted for Peak Hours and Off-Peak Hours Separately.*					
	2. The Power Supply Position needs to be supported by Graphs showing yearly or monthly 24 hr load pattern based on Load Research by the Company.					
	3. Peak Hours and Off-Peak Hours shall be as specified in the Retail Supply Tariff Order.					

Available/Existing Generation Capacities and Year wise Energy Availability								*Format-5*
No.	**Name of Plant**	**COD**	**Capacity (MW)**	**State Share (MW)**	**Energy Availabilty (MU)**			
					Yr (n+1)	**Yr (n+2)**	**Yr (n+3)**	**...Yr (n+10)**
1	**Uttarakhand State Genco Hydel Plants**							
2	**Uttarakhand State Gas based Plants**							
3	**Central Sector Stations**							
4	**Medium/Long Term tie-ups**							
5	**Other IPPs**							
6	**Solar Generators Availability**							
7	**Availability through PSP**							
8	**Availability through banking/Power Market**							
9	**Availability through BESS**							
10	***Others Sources (If any)***							
Total								
Note:	*1. This format is to be submitted Separately for Long-Term/Medium-Term/Short-Term.*							
	2. The above format needs to be filled considering the plant wise availablility of each State/Central Generating plants, IPPs, Renewable plants and other Plants for entire 10-year plan.							

Details of Planned/Upcoming Capacities for future years alongwith Energy Availability												*Format-6*
No.	**Name of Project**	**Capacity (MW)**	**State Share (MW)**	**SCOD**	**Year wise Capacity Addition (MW)**				**Energy Availabilty (MU)**			
					Yr (n+1)	**Yr (n+2)**	**Yr (n+3)**	**...Yr (n+10)**	**Yr (n+1)**	**Yr (n+2)**	**Yr (n+3)**	**...Yr (n+10)**
1	**Uttarakhand State Genco Hydel Plants**											
2	**Uttarakhand State Gas based Plants**											
3	**Central Sector Stations**											
4	**Medium/Long Term tie-ups**											
5	**Other IPPs**											
6	**Solar Generators Availability**											
7	**Availability through PSP**											
8	**Availability through BESS**											
9	**Availability through banking/Power Market**											
10	**Others Sources (If any)**											
Total												
Note:	*1. This format is to be submitted Separately for Long-Term/Medium-Term/Short-Term.*											
	2. The above format needs to be filled considering the plant wise availablility of each State/Central Generating plants, IPPs, Renewable plants and other Plants for entire 10-year plan.											

Month-Wise Energy Availabilty from Available/Exisitng Generation Capacities													*Format-7*
No.	**Name of Project**	**Monthly Energy Availabilty (MU)**											
		April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**
1	**Uttarakhand State Genco Hydel Plants**												
2	**Uttarakhand State Gas based Plants**												
3	**Central Sector Stations**												
4	**Medium/Long Term tie-ups**												
5	**Other IPPs**												
6	**Solar Generators Availability**												
7	**Availability through PSP**												
8	**Availability through BESS**												
9	**Availability through banking/Power Market**												
10	**Others Sources (If any)**												
Total													
Note:	*1. This format is to be submitted Separately for Long-Term/Medium-Term/Short-Term.*												
	2. This format is to be furnished year-wise for entire 10-years separately												
	3. The above format needs to be filled considering the plant wise availablility of each State/Central Generating plants, IPPs, Renewable plants and other Plants for entire 10-year plan.												

Month-Wise Energy Availabilty from Planned/Upcoming Generation Capacities													*Format-8*
No.	**Name of Project**	**Monthly Energy Availabilty (MU)**											
		April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**
1	**Uttarakhand State Genco Hydel Plants**												
2	**Uttarakhand State Gas based Plants**												
3	**Central Sector Stations**												
4	**Medium/Long Term tie-ups**												
5	**Other IPPs**												
6	**Solar Generators Availability**												
7	**Availability through PSP**												
8	**Availability through BESS**												
9	**Availability through banking/Power Market**												
10	**Others Sources (If any)**												
Total													
Note:	*1. This format is to be submitted Separately for Long-Term/Medium-Term/Short-Term.*												
	2. This format is to be furnished year-wise for entire 10-years separately.												
	3. The above format needs to be filled considering the plant wise availablility of each State/Central Generating plants, IPPs, Renewable plants and other Plants for entire 10-year plan.												

Summary of Month wise Energy Requirement and Energy Availability (MU)													*Format-9*
No.	**Particulars**	**Monthly Energy Availabilty (MU)**											
		April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**
1	**Yr (n+1)**												
	Energy Requirement												
	Energy Availability												
	Surplus(+)/Deficit(-) (MU)												
	Surplus(+)/Deficit(-)(%)												
2	**Yr (n+2)**												
	Energy Requirement												
	Energy Availability												
	Surplus(+)/Deficit(-) (MU)												
	Surplus(+)/Deficit(-)(%)												
3	**Yr (n+3)**												
	Energy Requirement												
	Energy Availability												
	Surplus(+)/Deficit(-) (MU)												
	Surplus(+)/Deficit(-)(%)												
…… 10	**…..Yr (n+10)**												
	Energy Requirement												
	Energy Availability												
	Surplus(+)/Deficit(-) (MU)												
	Surplus(+)/Deficit(-)(%)												
Note:	*1.This format figures should tally with Format-2, Format-7 and Format-8.*												
	2. This format is to be furnished year-wise for entire 10-years separately.												
	3. The above format needs to be filled considering the plant wise availablility of each State/Central Generating plants, IPPs, Renewable plants and other Plants for entire 10-year plan.												

Generating Stations Details																*Format-10*
Sr. No.	**Name of Generating Station**	**Region /State**	**Installed capacity (MW)**	**Share of Uttarakhand (%)**	**COD/ SCOD**	**Expected Retirement Year**	**Fixed Cost (Rs/MW)**	**Variable Cost (Rs/kWh)**	**Auxiliary Consumption (%)**	**Max Generation Limits (MW)**	**Min Generation Limits (MW)**	**Fuel GCV (GJ/kg)**	**Heat Rate (at full Load)**	**Heat rate (at part load i.e. 55%)**	**Ramp Up rate (MW/min)**	**Ramp down rate (MW/min)**

Continued…

Generating Stations Details													*Format-10 (A)*
Plant Availbility Factor (in %) in case of Thermal and Hydro / Capacity Utulisation Factor for renewable based resources	**Design Energy in case of Hydro (MU)**	**Start-up Cost (Rs. Crore)**	**Start-up time (Hours)**	**Backdown Compention Cost (Rs. Crore)**	**Planned Maintenance (Hours)**	**Forced Outage (Hours)**	**Mode of Operation (PPA/MOD/ Must Run)**	**Storage (In case of Hydro & PSP) (in MWh)**	**Investment Cost (Rs./Crore/MW)**	**Date of signing of PPA**	**Date of Expiry of PPA**	**Type of Capacity (Existing/ Planned/Addition)**	**Contract Type (Long-Term/Medium Term and Short Term)**

Plan for Renewable Power Obligation (RPO)							*Format-11*
Particulars			**Projection**				
		Unit	**Yr (n+1)**	**Yr (n+2)**	**Yr (n+3)**	**Yr (n+4)**	**...Yr (n+10)**
Ex-Bus Energy Requirement (MU) (DISCOMs)		MU					
Wind RPO (by WPPs commissioned after 31st March 2022)	**RPO**	%					
	RPO	MU					
	Availability from Qualified Tied up (including consented) projects						
	Availability from Wind Component of RE RTC projects						
	Year wise Balance RPO quantum to be met						
	Additional Capacity required up to fulfill RPO	MW					
HPO (by Hydro projects commissioned after 8th March 2019)	**RPO**	%					
	RPO	MU					
	Availability from Qualified Tied up (including consented) projects						
	Year wise Balance RPO quantum to be met						
	Additional Capacity required up to fulfill RPO	MW					
Distributed RPO (Distributed renewable energy component shall be met only from the energy generated from renewable energy projects that are less than 10 MW in size and shall include solar installations under all configuration (niet metering, gross metering, virtual net metering, group net metering, behind the meter installation and any other configuration) notified by the Central Government)	**RPO**	%					
	RPO	MU					
	Availability from Qualified Tied up (including consented) projects						
	Availability from Solar Component of RE RTC projects						
	Year wise Balance RPO quantum to be met						
	Additional Capacity required up to fulfill RPO	MW					
Other RPO (Other RPO shall be met by energy produced from any RE power project not mentioned in (2), (3) and (4) above and shall comprise energy from all Wind Power Projects, HPPs (including PSPs and SHPs) including free power)	**RPO**	%					
	RPO	**MU**					
	Old WPP's Contribution						
	Old Hydro Project's Contribution						
	Other Solar Contribution						
	Total Contribution from Tied up Projects						
	Remaining RPO Quantum						
	Additional Capacity required up to fulfill RPO	**MW**					
Total RPO	**RPO**	%					
	RPO	MU					
	RPO	MW					
ESO	**Energy Storage Obligation**	%					
	Energy to be procured through Storage	MU					
	Energy to be procured through Storage	MW					

Deviation in Demand Forecast (Summary Statement for State)					*Format-12*
Sr. No.	**Particulars**	**Previous Years approved As per Plan (1)**	**Actual (2)**	**Deviation (2-1)**	**Reasons for deviation**
1	**Total Energy Sale (MU)-** ***(Cumulative of all consumer categories)***				
2	Distribution losses - in %				
3	Distribution losses - in MU				
4	**Supply / Requirement at DISCOM Boundary(MU)**				
5	Intra-State Transmission losses - in %				
6	Intra-State Transmission losses - in MU				
7	**Supply / Requirement at State Boundary(MU)**				
8	Inter-State Transmission losses - in %				
9	Inter-State Transmission losses - in MU				
10	**Ex-Bus Requirement of DISCOM (MU)**				
11	*Sale by UPCL to Outside State*				
12	*Energy Wheeled for OA Consumers*				
13	**Ex-Bus Requirement of State (MU)**				
14	**Peak load of DISCOM (MW)**				
15	**Peak load of State (MW)**				

Deviation in Energy Availability					*Format-13*
Sr. No.	**Particulars**	**Previous Years approved As per Plan (1)**	**Actual (2)**	**Deviation (2-1)**	**Reasons for deviation**
1	**Ex-Bus Requirement of State (MU)**				
	For DISCOMs (MU)				
	For Sale by UPCL to Outside State				
	For OA (MU)				
2	**Energy Availability (MU)**				
	Uttarakhand State Genco Hydel Plants				
	Uttarakhand State Gas based Plants				
	Central Sector Stations				
	Medium/Long Term tie-ups				
	Other IPPs				
	Solar Generators Availability				
	Availability through PSP				
	Availability through BESS				
	Availability through banking/Power Market				
	Others Sources (If any)				
5	**TOTAL (MU)**				