



## 2024 RTP Assumptions

ERCOT  
Regional Transmission Planning

February 2024

# Agenda

- DC tie dispatch
- Wind dispatch
- Solar dispatch
- Hydro dispatch
- Battery dispatch
- Rooftop solar incorporation

# DC Tie Dispatch

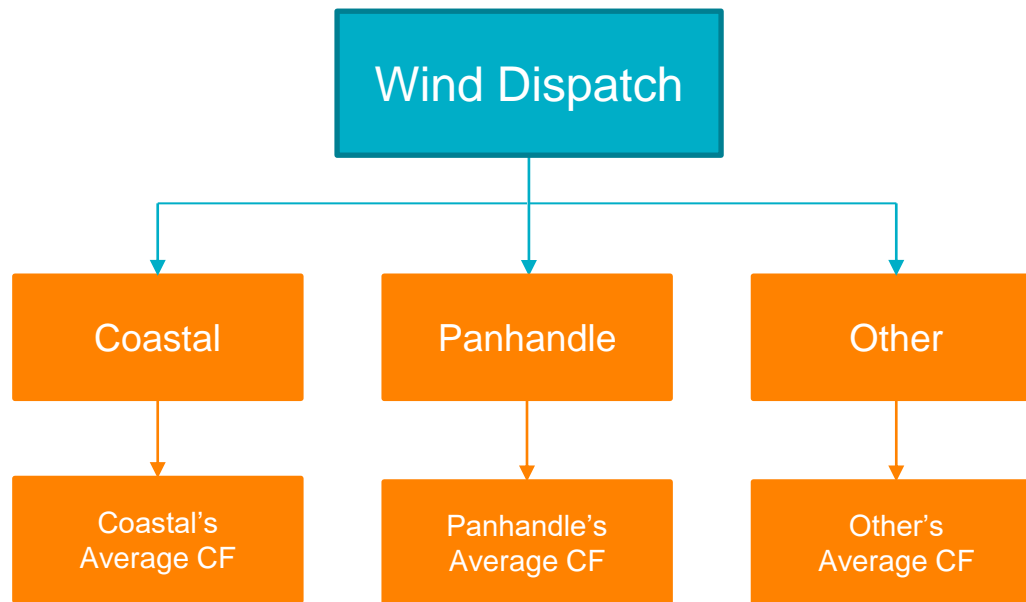
- **Summer Peak Cases:**
  - Analyzed DC tie flows during the top 20 load hours for the past 3 years (60 hours total)
- **Minimum Load Case:**
  - Analyzed DC tie flows during the bottom 20 load hours for the past 3 years (60 hours total)

DC Tie	Summer Peak Cases			Minimum Load Case		
	2024 RTP	2023 RTP	2022 RTP	2024 RTP	2023 RTP	2022 RTP
East	600 MW (IMPORT)	600 MW (IMPORT)	600 MW (IMPORT)	0 MW	0 MW	0 MW
North	220 MW (IMPORT)	220 MW (IMPORT)	220 MW (IMPORT)	0 MW	0 MW	0 MW
Laredo	0 MW	0 MW	0 MW	0 MW	0 MW	0 MW
Railroad	0 MW	0 MW	0 MW	0 MW	0 MW	0 MW

See Appendix for detailed top and bottom 20 load hours data

# Wind Dispatch Methodology

- **All Wind:**
  - CDR weighted average capacity factor for each wind region
    - Coastal, Panhandle, Other
  - No longer will wind inside of each study region be dispatched to its 15<sup>th</sup> percentile capacity factor



# Wind Dispatch

- **Summer Peak Cases:**
  - CDR weighted average capacity factor for all of ERCOT
  - Based on top 20 load hours of each year (past 10 years)
- **Minimum Load Case:**
  - Weighted average capacity factor for each wind region (Coastal, Panhandle, Other)
  - Based on bottom 20 load hours of each year (past 3 years)

Case		2024 RTP Wind Capacity Factors		
		Coastal	Panhandle	Other
Summer Peak	All Study Regions	60%	29%	22%
Minimum Load	All Study Regions	31%	52%	41%

# Solar Dispatch

- **Summer Peak Cases:**
  - CDR weighted average capacity factor for all of ERCOT
  - Based on top 20 load hours of each year (past 3 years)
- **Minimum Load Case:**
  - All solar offline

Case	2024 RTP Solar Capacity Factor
Summer Peak	76%
Minimum Load	Offline

# Hydro Dispatch

- **Summer Peak Cases:**
  - CDR weighted average capacity factor for all of ERCOT
  - Based on top 20 load hours of each year
- **Minimum Load Case:**
  - All hydro offline

Case	2024 RTP Hydro Capacity Factor
Summer Peak	80%
Minimum Load	Offline

# Battery Dispatch

- **Summer Peak Cases:**

- Previously only dispatched battery energy storage with a duration of 4 hours or longer
- In 2024 RTP all battery energy storage will be dispatched regardless of duration
  - Except those registered as SODG
  - Including distribution connected battery energy storage
- Dispatch level will be up to 20.3% of their maximum discharging capacity
  - Consistent with the methodology described in note [3] on the “Peak v High Net Load Hour 2024” tab of the December 2023 CDR report
- Subject to Security-Constrained Optimal Power Flow (SCOPF)

- **Minimum Load Case:**

- All battery energy storage will be assumed charging up to their maximum charging capacity
  - Except those registered as SODG
  - Including distribution connected battery energy storage
  - Subject to Security-Constrained Optimal Power Flow (SCOPF)



# Rooftop Solar Growth Forecast Incorporation

- Rooftop solar impact taken from ERCOT's 90<sup>th</sup> percentile summer peak demand forecast
- Large growth in Coast and North Central

SUM (MW)	2026	2027	2029	2030
Coast	608	814	1,369	1,718
East	31	39	59	70
North	47	60	90	108
North Central	993	1,321	2,202	2,753
South	227	305	519	655
South Central	127	174	307	394
West	64	85	141	176
Far West	103	131	199	239
<b>TOTAL</b>	<b>2,200</b>	<b>2,929</b>	<b>4,886</b>	<b>6,113</b>

- Weather zone loads will be reduced based on these values

# Questions / Comments

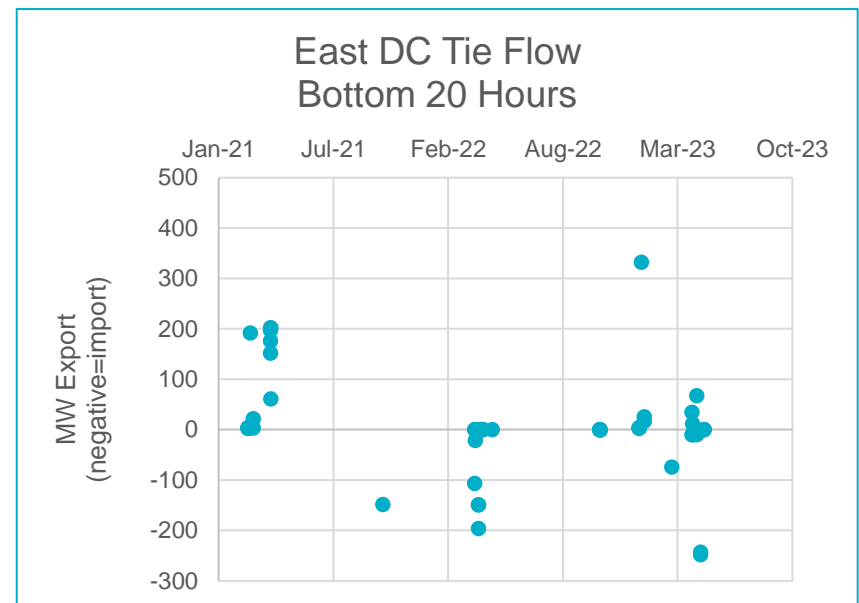
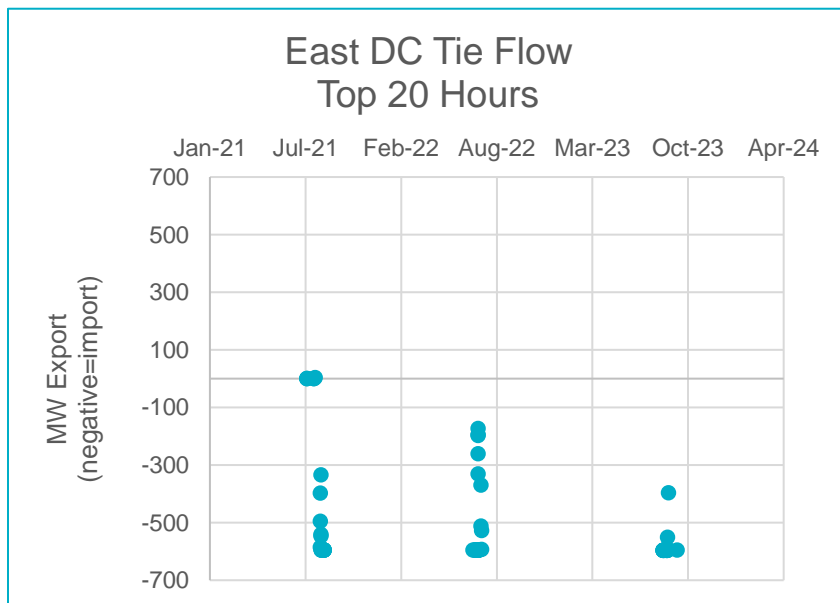
- Please send questions and/or comments to:
  - [Jameson.Haesler@ercot.com](mailto:Jameson.Haesler@ercot.com)
  - [Ping.Yan@ercot.com](mailto:Ping.Yan@ercot.com)

# Appendix

# 2021-23 Top/Bottom 20 Load Hours – East DC Tie

2021 - 2023 Top 20 Load Hours	
Average Flow	474 MW Import
Median Flow	595 MW Import
Flow	% of hours within range
Import 500 – 600 MW	72%
Import 200 – 499 MW	11%
Import 1 – 199 MW	5%
No Flow	10%
Export 1 – 600 MW	2%

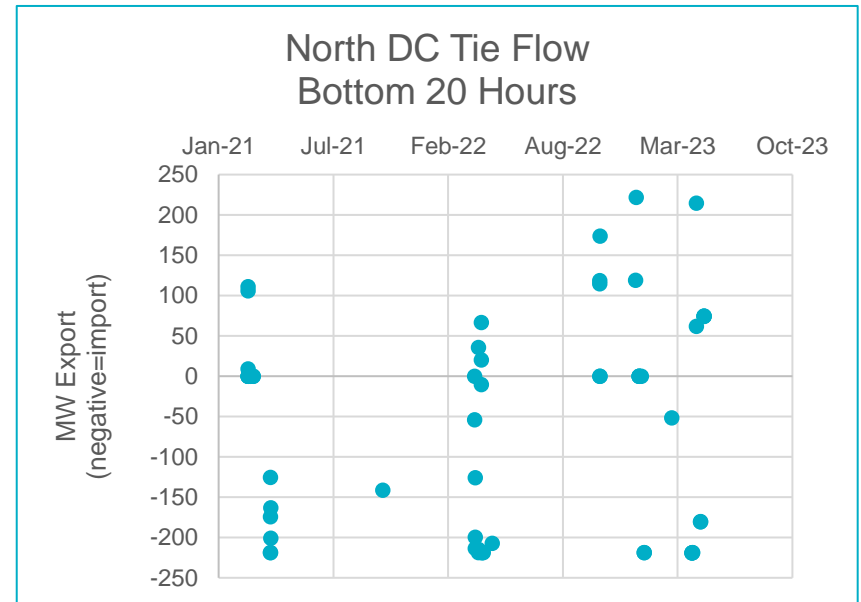
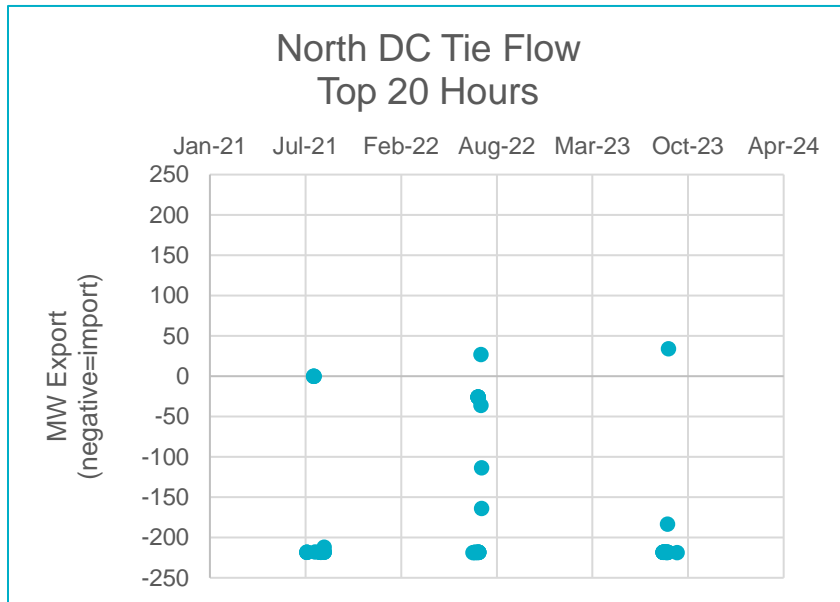
2021 - 2023 Bottom 20 Load Hours	
Average Flow	25 MW Export
Median Flow	1 MW Export
Flow	% of hours within range
Import 100 – 600 MW	12%
Import 1 – 99 MW	8%
No Flow	30%
Export 1 – 99 MW	35%
Export 100 – 600 MW	15%



# 2021-23 Top/Bottom 20 Load Hours – North DC Tie

2021 - 2023 Top 20 Load Hours	
Average Flow	177 MW Import
Median Flow	218 MW Import
Flow	% of hours within range
Import 150 – 220 MW	80%
Import 1 – 149 MW	12%
No Flow	5%
Export 1 – 149 MW	3%
Export 150 – 220 MW	0%

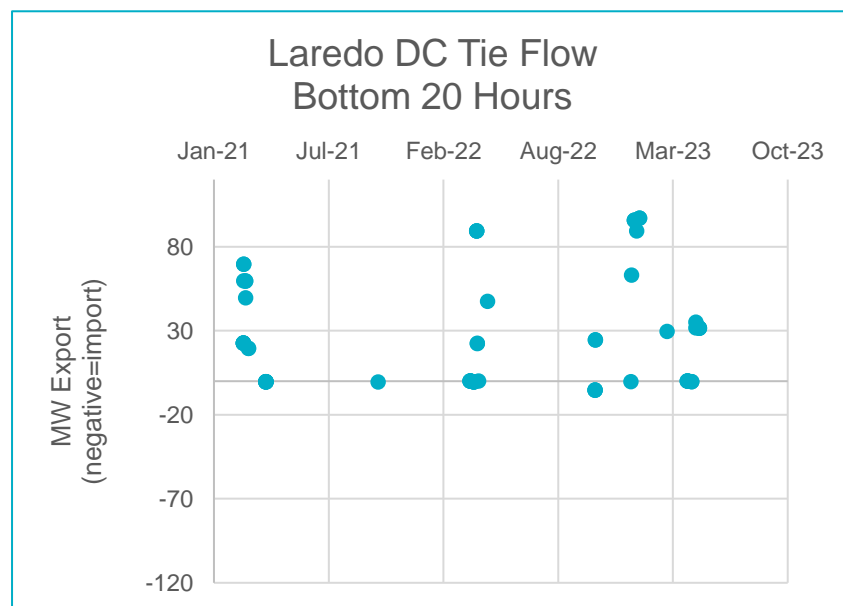
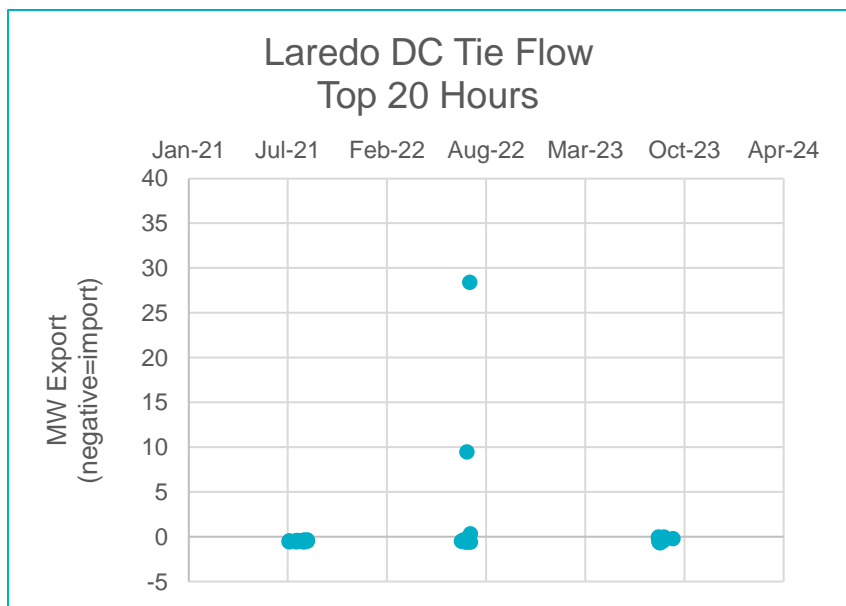
2020 - 2022 Bottom 20 Load Hours	
Average Flow	55 MW Import
Median Flow	0 MW
Flow	% of hours within range
Import 200 – 220 MW	28%
Import 1 – 199 MW	18%
No Flow	28%
Export 1 – 199 MW	23%
Export 200 – 220 MW	3%



# 2021-23 Top/Bottom 20 Load Hours – Laredo DC Tie

2021 - 2023 Top 20 Load Hours	
Average Flow	0 MW Import
Median Flow	0 MW Import
Flow	% of hours within range
Import 50 – 100 MW	0%
Import 1 – 49 MW	0%
No Flow	97%
Export 1 – 49 MW	3%
Export 50 – 100 MW	0%

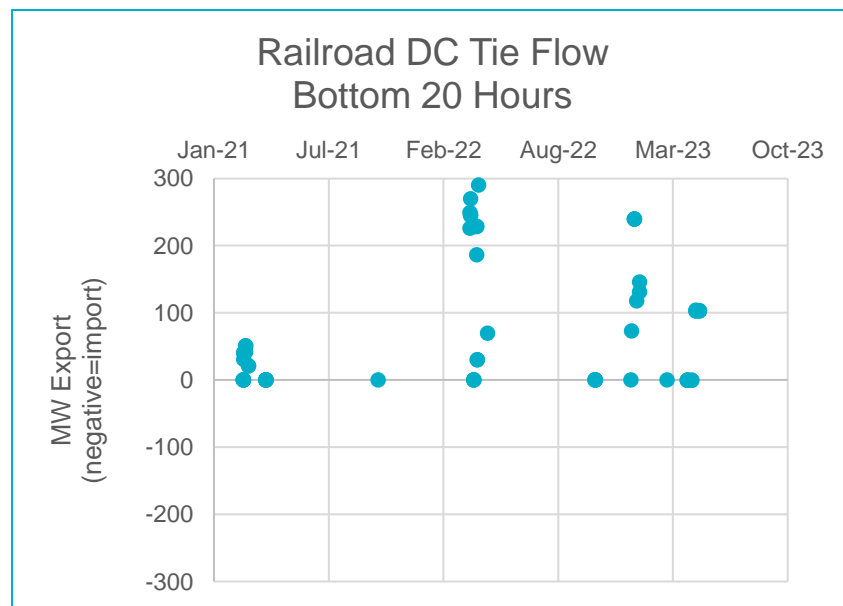
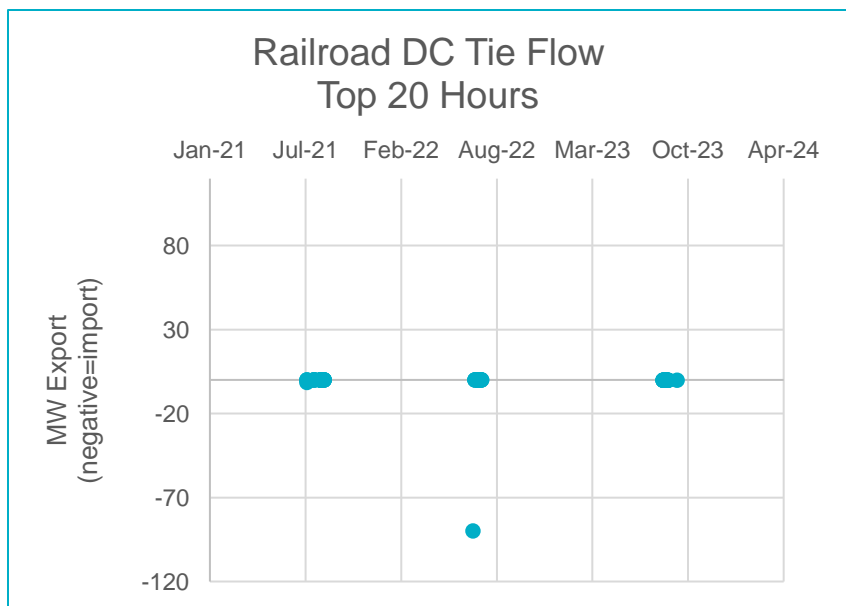
2021 - 2023 Bottom 20 Load Hours	
Average Flow	29 MW Export
Median Flow	22 MW Export
Flow	% of hours within range
Import 50 – 100 MW	0%
Import 1 – 49 MW	5%
No Flow	38%
Export 1 – 49 MW	32%
Export 50 – 100 MW	25%



# 2021-23 Top/Bottom 20 Load Hours – Railroad DC Tie

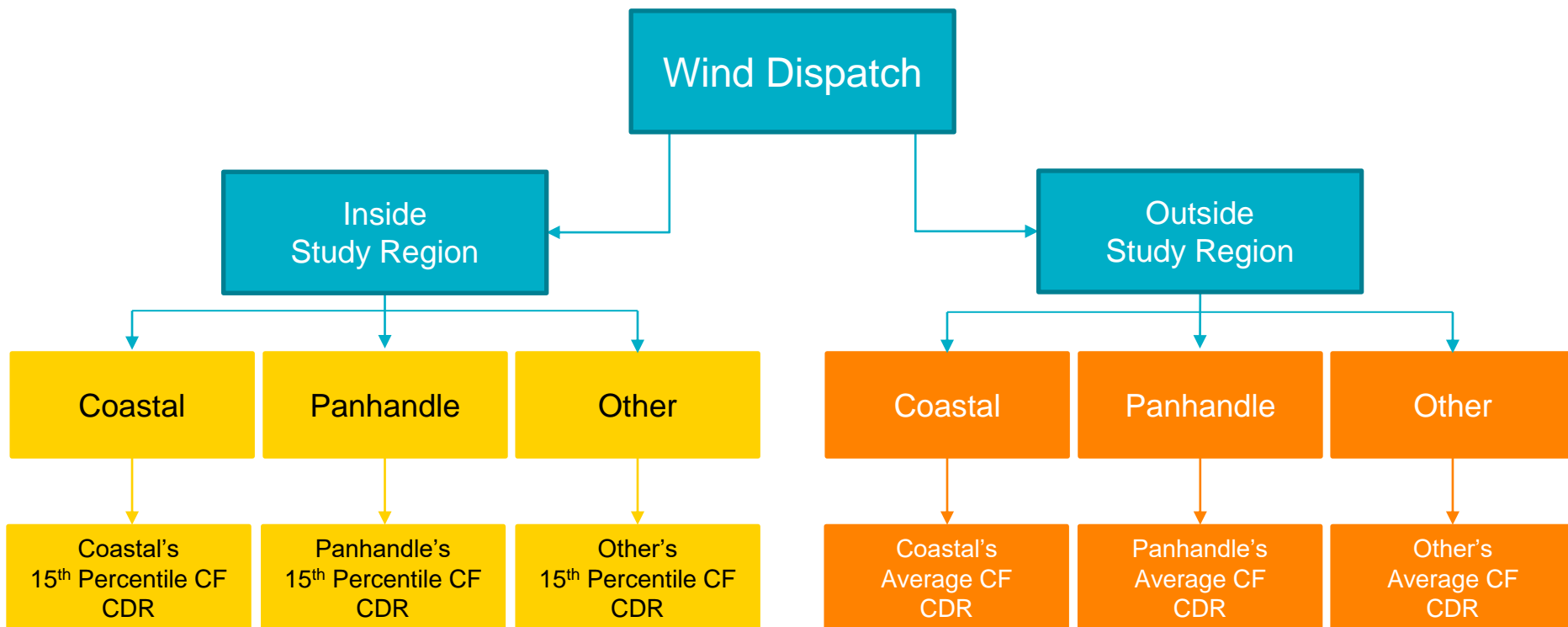
2021 - 2023 Top 20 Load Hours	
Average Flow	2 MW Import
Median Flow	0 MW Import
Flow	% of hours within range
Import 150 – 300 MW	0%
Import 50 – 149 MW	2%
Import 1 – 49 MW	2%
No Flow	96%
Export 1 – 300 MW	0%

2021 - 2023 Bottom 20 Load Hours	
Average Flow	72 MW Export
Median Flow	0 MW
Flow	% of hours within range
Import 1 – 300 MW	0%
No Flow	47%
Export 1 – 99 MW	20%
Export 100 – 199 MW	15%
Export 200 – 300 MW	18%



# Previous Wind Dispatch Methodology: Summer Peak

- **Outside Study Region:**
  - CDR weighted average capacity factor (CF) for each wind region (Coastal, Panhandle, Other)
  - Based on top 20 load hours of each year (past 10 years)
- **Inside Study Region:**
  - CDR weighted 15<sup>th</sup> percentile<sup>1</sup> CF for each wind region (Coastal, Panhandle, Other)
  - Based on top 20 load hours of each year (past 10 years)





# 2023 RTP Wind Dispatch Capacity Factors

Case		2023 RTP Wind Capacity Factors		
		Coastal	Panhandle	Other
Summer Peak	Inside Study Region	46%	13%	8%
	Outside Study Region	60%	30%	21%
Minimum Load	All Study Regions	29%	49%	39%