

## Winter 2022-23 DER Asset Class Average Unavailability Factors

The following table provides the list of Asset Class Average Unavailability Factors by Asset Source ID for DER for the Winter 2022-23 Capability Period, used by the Aggregation System. The Class Average Unavailability Factors serve as a proxy value for actual historical Aggregation or Asset Unavailability Factors required to calculate the Facility Seasonal Factors. For additional details regarding class average values and usage of class average, refer to the ICAP Manual Section 4.5.

Capability Period	Asset Source ID	Asset Type	Source Type(s)	Source Fuel(s)	Response Type	Class Average Unavailability Factor (%)
Winter 2022-23	101	Demand Reduction	Demand Reduction	Curtailement	C	8.91
Winter 2022-23	102	Demand Reduction	Demand Reduction	Curtailement	B	8.91
Winter 2022-23	103	Demand Reduction	Demand Reduction	Curtailement	I	8.91
Winter 2022-23	104	Demand Reduction	Demand Reduction	Curtailement	G	8.91
Winter 2022-23	201	Generator	Combined Cycle	Coal		5.07
Winter 2022-23	202	Generator	Combined Cycle	Butane		5.07
Winter 2022-23	203	Generator	Combined Cycle	Diesel		5.07
Winter 2022-23	204	Generator	Combined Cycle	Hydrogen		5.07
Winter 2022-23	205	Generator	Combined Cycle	Jet Fuel		5.07
Winter 2022-23	206	Generator	Combined Cycle	Kerosene		5.07
Winter 2022-23	207	Generator	Combined Cycle	Methane (Bio Gas)		5.07
Winter 2022-23	208	Generator	Combined Cycle	Natural Gas		5.07
Winter 2022-23	209	Generator	Combined Cycle	No. 2 Fuel Oil		5.07
Winter 2022-23	210	Generator	Combined Cycle	No. 4 Fuel Oil		5.07
Winter 2022-23	211	Generator	Combined Cycle	No. 6 Fuel Oil		5.07
Winter 2022-23	212	Generator	Combined Cycle	Other		5.07
Winter 2022-23	213	Generator	Combined Cycle	Propane		5.07
Winter 2022-23	214	Generator	Combined Cycle	Waste Heat		5.07
Winter 2022-23	215	Generator	Combined Cycle	Wood and/or Wood Waste		5.07
Winter 2022-23	216	Generator	Cogeneration	Butane		5.07
Winter 2022-23	217	Generator	Cogeneration	Coal		5.07
Winter 2022-23	218	Generator	Cogeneration	Diesel		5.07
Winter 2022-23	219	Generator	Cogeneration	Hydrogen		5.07
Winter 2022-23	220	Generator	Cogeneration	Jet Fuel		5.07
Winter 2022-23	221	Generator	Cogeneration	Kerosene		5.07
Winter 2022-23	222	Generator	Cogeneration	Methane (Bio Gas)		5.07
Winter 2022-23	223	Generator	Cogeneration	Natural Gas		5.07
Winter 2022-23	224	Generator	Cogeneration	No. 2 Fuel Oil		5.07

Capability Period	Asset Source ID	Asset Type	Source Type(s)	Source Fuel(s)	Response Type	Class Average Unavailability Factor (%)
Winter 2022-23	225	Generator	Cogeneration	No. 4 Fuel Oil		5.07
Winter 2022-23	226	Generator	Cogeneration	No. 6 Fuel Oil		5.07
Winter 2022-23	227	Generator	Cogeneration	Other		5.07
Winter 2022-23	228	Generator	Cogeneration	Propane		5.07
Winter 2022-23	229	Generator	Cogeneration	Refuse		5.07
Winter 2022-23	230	Generator	Cogeneration	Waste Heat		5.07
Winter 2022-23	231	Generator	Cogeneration	Wood and/or Wood Waste		5.07
Winter 2022-23	232	Generator	Combustion Turbine	Butane		12.94
Winter 2022-23	233	Generator	Combustion Turbine	Diesel		4.55
Winter 2022-23	234	Generator	Combustion Turbine	No. 6 Fuel Oil		28.27
Winter 2022-23	235	Generator	Combustion Turbine	Jet Fuel		12.94
Winter 2022-23	236	Generator	Combustion Turbine	Kerosene		12.94
Winter 2022-23	237	Generator	Combustion Turbine	Methane (Bio Gas)		18.97
Winter 2022-23	238	Generator	Combustion Turbine	Natural Gas		18.97
Winter 2022-23	239	Generator	Combustion Turbine	No. 2 Fuel Oil		28.27
Winter 2022-23	240	Generator	Combustion Turbine	No. 4 Fuel Oil		28.27
Winter 2022-23	242	Generator	Combustion Turbine	Propane		12.94
Winter 2022-23	243	Generator	Combustion Turbine	Coal		6.93
Winter 2022-23	244	Generator	Combustion Turbine	Waste Heat		12.94
Winter 2022-23	245	Generator	Fuel Cell	Hydrogen		11.53
Winter 2022-23	246	Generator	Conventional Hydro	Water		14.44
Winter 2022-23	247	Generator	Internal Combustion	Butane		12.94
Winter 2022-23	248	Generator	Internal Combustion	Diesel		4.55
Winter 2022-23	250	Generator	Internal Combustion	Jet Fuel		12.94
Winter 2022-23	251	Generator	Internal Combustion	Kerosene		12.94
Winter 2022-23	252	Generator	Internal Combustion	Methane (Bio Gas)		18.97
Winter 2022-23	253	Generator	Internal Combustion	Natural Gas		18.97
Winter 2022-23	254	Generator	Internal Combustion	No. 2 Fuel Oil		28.27
Winter 2022-23	255	Generator	Internal Combustion	No. 4 Fuel Oil		28.27
Winter 2022-23	256	Generator	Internal Combustion	No. 6 Fuel Oil		28.27
Winter 2022-23	258	Generator	Internal Combustion	Propane		12.94
Winter 2022-23	259	Generator	Internal Combustion	Wood and/or Wood Waste		12.94
Winter 2022-23	260	Generator	Jet Engine	Butane		13.9
Winter 2022-23	261	Generator	Jet Engine	Diesel		13.9
Winter 2022-23	262	Generator	Jet Engine	Jet Fuel		13.9
Winter 2022-23	263	Generator	Jet Engine	Kerosene		13.9

Capability Period	Asset Source ID	Asset Type	Source Type(s)	Source Fuel(s)	Response Type	Class Average Unavailability Factor (%)
Winter 2022-23	264	Generator	Jet Engine	Methane (Bio Gas)		13.9
Winter 2022-23	265	Generator	Jet Engine	Natural Gas		13.9
Winter 2022-23	266	Generator	Jet Engine	No. 2 Fuel Oil		13.9
Winter 2022-23	267	Generator	Jet Engine	No. 4 Fuel Oil		13.9
Winter 2022-23	268	Generator	Jet Engine	No. 6 Fuel Oil		13.9
Winter 2022-23	269	Generator	Jet Engine	Other		13.9
Winter 2022-23	270	Generator	Jet Engine	Propane		13.9
Winter 2022-23	271	Generator	Steam Turbine	Refuse		12.94
Winter 2022-23	272	Generator	Steam Turbine	Wood and/or Wood Waste		12.94
Winter 2022-23	273	Generator	Steam (BWR Nuclear)	Uranium		1.52
Winter 2022-23	274	Generator	Steam (PWR Nuclear)	Uranium		2.8
Winter 2022-23	275	Generator	Steam Turbine	Butane		12.94
Winter 2022-23	276	Generator	Steam Turbine	Coal		6.93
Winter 2022-23	277	Generator	Steam Turbine	Diesel		4.55
Winter 2022-23	278	Generator	Steam Turbine	Jet Fuel		12.94
Winter 2022-23	279	Generator	Steam Turbine	Kerosene		12.94
Winter 2022-23	280	Generator	Steam Turbine	Methane (Bio Gas)		18.97
Winter 2022-23	281	Generator	Steam Turbine	Natural Gas		18.97
Winter 2022-23	282	Generator	Steam Turbine	No. 2 Fuel Oil		28.27
Winter 2022-23	283	Generator	Steam Turbine	No. 4 Fuel Oil		28.27
Winter 2022-23	284	Generator	Steam Turbine	No. 6 Fuel Oil		28.27
Winter 2022-23	286	Generator	Steam Turbine	Propane		12.94
Winter 2022-23	301	Energy Storage	Energy Storage	Battery		11.53
Winter 2022-23	302	Energy Storage	Pumped Storage Hydro	Water		11.53
Winter 2022-23	303	Energy Storage	Fly Wheel	Fly Wheel		11.53
Winter 2022-23	401	Solar	Photovoltaic	Sunlight		98
Winter 2022-23	501	Wind	Wind Turbine	Wind		66
Winter 2022-23	601	Landfill Gas	Combustion Turbine	Methane (Bio Gas)		29.48
Winter 2022-23	602	Landfill Gas	Internal Combustion	Methane (Bio Gas)		29.48
Winter 2022-23	603	Landfill Gas	Steam Turbine	Methane (Bio Gas)		29.48