

## Winter 2023-24 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 2023-24 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 2023-24	101	Demand Reduction	Demand Reduction	Curtailement	C	10.39
Winter 2023-24	102	Demand Reduction	Demand Reduction	Curtailement	B	10.39
Winter 2023-24	103	Demand Reduction	Demand Reduction	Curtailement	I	10.39
Winter 2023-24	104	Demand Reduction	Demand Reduction	Curtailement	G	10.39
Winter 2023-24	201	Generator	Combined Cycle	Coal		5.71
Winter 2023-24	202	Generator	Combined Cycle	Butane		5.71
Winter 2023-24	203	Generator	Combined Cycle	Diesel		5.71
Winter 2023-24	204	Generator	Combined Cycle	Hydrogen		5.71
Winter 2023-24	205	Generator	Combined Cycle	Jet Fuel		5.71
Winter 2023-24	206	Generator	Combined Cycle	Kerosene		5.71
Winter 2023-24	207	Generator	Combined Cycle	Methane (Bio Gas)		5.71
Winter 2023-24	208	Generator	Combined Cycle	Natural Gas		5.71
Winter 2023-24	209	Generator	Combined Cycle	No. 2 Fuel Oil		5.71
Winter 2023-24	210	Generator	Combined Cycle	No. 4 Fuel Oil		5.71
Winter 2023-24	211	Generator	Combined Cycle	No. 6 Fuel Oil		5.71
Winter 2023-24	212	Generator	Combined Cycle	Other		5.71
Winter 2023-24	213	Generator	Combined Cycle	Propane		5.71
Winter 2023-24	214	Generator	Combined Cycle	Waste Heat		5.71
Winter 2023-24	215	Generator	Combined Cycle	Wood and/or Wood Waste		5.71
Winter 2023-24	216	Generator	Cogeneration	Butane		5.71
Winter 2023-24	217	Generator	Cogeneration	Coal		5.71
Winter 2023-24	218	Generator	Cogeneration	Diesel		5.71
Winter 2023-24	219	Generator	Cogeneration	Hydrogen		5.71
Winter 2023-24	220	Generator	Cogeneration	Jet Fuel		5.71
Winter 2023-24	221	Generator	Cogeneration	Kerosene		5.71
Winter 2023-24	222	Generator	Cogeneration	Methane (Bio Gas)		5.71
Winter 2023-24	223	Generator	Cogeneration	Natural Gas		5.71
Winter 2023-24	224	Generator	Cogeneration	No. 2 Fuel Oil		5.71

Capability Period	Asset Source ID	Asset Type	Source Type(s)	Source Fuel(s)	Response Type	Class Average Unavailability Factor (%)
Winter 2023-24	225	Generator	Cogeneration	No. 4 Fuel Oil		5.71
Winter 2023-24	226	Generator	Cogeneration	No. 6 Fuel Oil		5.71
Winter 2023-24	227	Generator	Cogeneration	Other		5.71
Winter 2023-24	228	Generator	Cogeneration	Propane		5.71
Winter 2023-24	229	Generator	Cogeneration	Refuse		5.71
Winter 2023-24	230	Generator	Cogeneration	Waste Heat		5.71
Winter 2023-24	231	Generator	Cogeneration	Wood and/or Wood Waste		5.71
Winter 2023-24	232	Generator	Combustion Turbine	Butane		13.95
Winter 2023-24	233	Generator	Combustion Turbine	Diesel		5.18
Winter 2023-24	234	Generator	Combustion Turbine	No. 6 Fuel Oil		20.5
Winter 2023-24	235	Generator	Combustion Turbine	Jet Fuel		13.95
Winter 2023-24	236	Generator	Combustion Turbine	Kerosene		13.95
Winter 2023-24	237	Generator	Combustion Turbine	Methane (Bio Gas)		21.05
Winter 2023-24	238	Generator	Combustion Turbine	Natural Gas		21.05
Winter 2023-24	239	Generator	Combustion Turbine	No. 2 Fuel Oil		20.5
Winter 2023-24	240	Generator	Combustion Turbine	No. 4 Fuel Oil		20.5
Winter 2023-24	242	Generator	Combustion Turbine	Propane		13.95
Winter 2023-24	243	Generator	Combustion Turbine	Coal		7.07
Winter 2023-24	244	Generator	Combustion Turbine	Waste Heat		13.95
Winter 2023-24	245	Generator	Fuel Cell	Hydrogen		9.19
Winter 2023-24	246	Generator	Conventional Hydro	Water		14.35
Winter 2023-24	247	Generator	Internal Combustion	Butane		13.95
Winter 2023-24	248	Generator	Internal Combustion	Diesel		5.18
Winter 2023-24	250	Generator	Internal Combustion	Jet Fuel		13.95
Winter 2023-24	251	Generator	Internal Combustion	Kerosene		13.95
Winter 2023-24	252	Generator	Internal Combustion	Methane (Bio Gas)		21.05
Winter 2023-24	253	Generator	Internal Combustion	Natural Gas		21.05
Winter 2023-24	254	Generator	Internal Combustion	No. 2 Fuel Oil		20.5
Winter 2023-24	255	Generator	Internal Combustion	No. 4 Fuel Oil		20.5
Winter 2023-24	256	Generator	Internal Combustion	No. 6 Fuel Oil		20.5
Winter 2023-24	258	Generator	Internal Combustion	Propane		13.95
Winter 2023-24	259	Generator	Internal Combustion	Wood and/or Wood Waste		13.95
Winter 2023-24	260	Generator	Jet Engine	Butane		16.95
Winter 2023-24	261	Generator	Jet Engine	Diesel		16.95
Winter 2023-24	262	Generator	Jet Engine	Jet Fuel		16.95
Winter 2023-24	263	Generator	Jet Engine	Kerosene		16.95

Capability Period	Asset Source ID	Asset Type	Source Type(s)	Source Fuel(s)	Response Type	Class Average Unavailability Factor (%)
Winter 2023-24	264	Generator	Jet Engine	Methane (Bio Gas)		16.95
Winter 2023-24	265	Generator	Jet Engine	Natural Gas		16.95
Winter 2023-24	266	Generator	Jet Engine	No. 2 Fuel Oil		16.95
Winter 2023-24	267	Generator	Jet Engine	No. 4 Fuel Oil		16.95
Winter 2023-24	268	Generator	Jet Engine	No. 6 Fuel Oil		16.95
Winter 2023-24	269	Generator	Jet Engine	Other		16.95
Winter 2023-24	270	Generator	Jet Engine	Propane		16.95
Winter 2023-24	271	Generator	Steam Turbine	Refuse		13.95
Winter 2023-24	272	Generator	Steam Turbine	Wood and/or Wood Waste		13.95
Winter 2023-24	273	Generator	Steam (BWR Nuclear)	Uranium		2.06
Winter 2023-24	274	Generator	Steam (PWR Nuclear)	Uranium		1.63
Winter 2023-24	275	Generator	Steam Turbine	Butane		13.95
Winter 2023-24	276	Generator	Steam Turbine	Coal		7.07
Winter 2023-24	277	Generator	Steam Turbine	Diesel		5.18
Winter 2023-24	278	Generator	Steam Turbine	Jet Fuel		13.95
Winter 2023-24	279	Generator	Steam Turbine	Kerosene		13.95
Winter 2023-24	280	Generator	Steam Turbine	Methane (Bio Gas)		21.05
Winter 2023-24	281	Generator	Steam Turbine	Natural Gas		21.05
Winter 2023-24	282	Generator	Steam Turbine	No. 2 Fuel Oil		20.5
Winter 2023-24	283	Generator	Steam Turbine	No. 4 Fuel Oil		20.5
Winter 2023-24	284	Generator	Steam Turbine	No. 6 Fuel Oil		20.5
Winter 2023-24	286	Generator	Steam Turbine	Propane		13.95
Winter 2023-24	301	Energy Storage	Energy Storage	Battery		9.19
Winter 2023-24	302	Energy Storage	Pumped Storage Hydro	Water		9.19
Winter 2023-24	303	Energy Storage	Fly Wheel	Fly Wheel		9.19
Winter 2023-24	401	Solar	Photovoltaic	Sunlight		99.18
Winter 2023-24	501	Wind	Wind Turbine	Wind		66
Winter 2023-24	601	Landfill Gas	Combustion Turbine	Methane (Bio Gas)		18.01
Winter 2023-24	602	Landfill Gas	Internal Combustion	Methane (Bio Gas)		18.01
Winter 2023-24	603	Landfill Gas	Steam Turbine	Methane (Bio Gas)		18.01