```
[ 3 Items
  0: "The Task"
  1: "RawData"
  2: "Contractual Power Curve"
]
```


```
   Windspeed [m/s]     Power
0              1.0  0.000000
1              1.1  0.000098
2              1.2  0.000197
3              1.3  0.000295
4              1.4  0.000393

     Windspeed [m/s]  Power
236             24.6    1.0
237             24.7    1.0
238             24.8    1.0
239             24.9    1.0
240             25.0    1.0
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 4466 entries, 0 to 4465
Data columns (total 44 columns):
 #   Column                                  Non-Null Count  Dtype
---  ------                                  --------------  -----
 0   Date                                    4466 non-null   datetime64[ns]
 1   Wind speed                              4466 non-null   float64
 2   Wind max. [m/s]                         4466 non-null   float64
 3   Wind min. [m/s]                         4466 non-null   float64
```

```
 4   Rotation speed avg [rpm]                  4466 non-null   float64
 5   Rotation speed max. [rpm]                 4466 non-null   float64
 6   Rotation speed min. [rpm]                 4466 non-null   float64
 7   Power avg [kW]                            4466 non-null   float64
 8   Power max. [kW]                           4466 non-null   float64
 9   Power min. [kW]                           4466 non-null   float64
 10  Power Avail. wind. avg [kW]               4466 non-null   float64
 11  Power Avail. techn. avg [kW]              4466 non-null   float64
 12  Power Avail. force maj. avg [kW]          4466 non-null   float64
 13  Power Avail. ext. avg [kW]                4466 non-null   float64
 14  Reactive power avg [kvar]                 4466 non-null   float64
 15  Reactive power max. [kvar]                4466 non-null   float64
 16  Reactive power min. [kvar]                4466 non-null   float64
 17  Blade angle avg [°]                       4466 non-null   float64
 18  Nacelle position [°]                      4466 non-null   int64
 19   Temp. Spinner [°C]                       4466 non-null   float64
 20   Temp. Front bearing [°C]                 4466 non-null   float64
 21   Temp. Rear bearing [°C]                  4466 non-null   float64
 22   Temp. Pitch control cabinet A [°C]       4466 non-null   float64
 23   Temp. Pitch control cabinet B [°C]       4466 non-null   float64
 24   Temp. Pitch control cabinet C [°C]       4466 non-null   float64
 25   Temp. Blade A [°C]                       4466 non-null   float64
 26   Temp. Blade B [°C]                       4466 non-null   float64
 27   Temp. Blade C [°C]                       4466 non-null   float64
 28   Temp. Rotor 1 [°C]                       4466 non-null   float64
 29   Temp. Rotor 2 [°C]                       4466 non-null   float64
 30   Temp. Stator slot 1 [°C]                 4466 non-null   float64
 31   Temp. Stator slot 2 [°C]                 4466 non-null   float64
 32   Temp. Nacelle outside 1 [°C]             4466 non-null   float64
 33   Temp. Nacelle outside 2 [°C]             4466 non-null   float64
 34   Temp. Nacelle inside [°C]                4466 non-null   float64
 35   Temp. Control cabinet nacelle [°C]       4466 non-null   float64
 36   Temp. Main carrier [°C]                  4466 non-null   float64
 37   Temp. Rectifier control cabinet 1 [°C]   4466 non-null   float64
 38   Temp. Yaw converter control cabinet [°C] 4466 non-null   float64
 39   Temp. Fan inverter control cabinet [°C]  4466 non-null   float64
 40   Temp. Outside [°C]                       4466 non-null   float64
 41   Temp. Tower [°C]                         4466 non-null   float64
 42   Temp. Control cabinet [°C]               4466 non-null   float64
 43   Temp. Trafo [°C]                         4466 non-null   float64
dtypes: datetime64[ns](1), float64(42), int64(1)
```

```
memory usage: 1.5 MB
```

object	count object	mean object	min object	25% object	50% object	75% object	ma obj
Date	4466	1900-01-16T12:03:04.755	1900-01-01T00:00:00.000	1900-01-08T18:02:30.000	1900-01-16T12:05:00.000	1900-01-24T06:07:30.000	190
Wind speed	4466	7.783721451	0	5.6	7.4	9.7	18
Wind max. [m/s]	4466	10.4749664129	0	7.3	9.8	13.7	26.
Wind min. [m/s]	4466	5.1339677564	0	3.6	4.9	6.5	12.
Rotation speed avg [rpm]	4466	9.9248275862	0	7.63	10.515	13.56	14.
Rotation speed max. [rpm]	4466	10.8829646216	0	8.3	11.89	14.8475	16.
Rotation speed min. [rpm]	4466	8.8351298701	0	6.7925	8.97	12	14.
Power avg [kW]	4466	0.4087936541	0	0.0869672131	0.3085245902	0.7271311475	1.0
Power max. [kW]	4466	0.5048260445	0	0.1262295082	0.4440983607	1.0078688525	1.0
Power min. [kW]	4466	0.2891148422	0	0.0394262295	0.1867213115	0.4619672131	1.0

44 rows, 8 columns 50 / page Page 1 of 1

📊 Data loaded: 4466 records from 1900-01-01 to 1900-01-31

✅ Helper functions defined

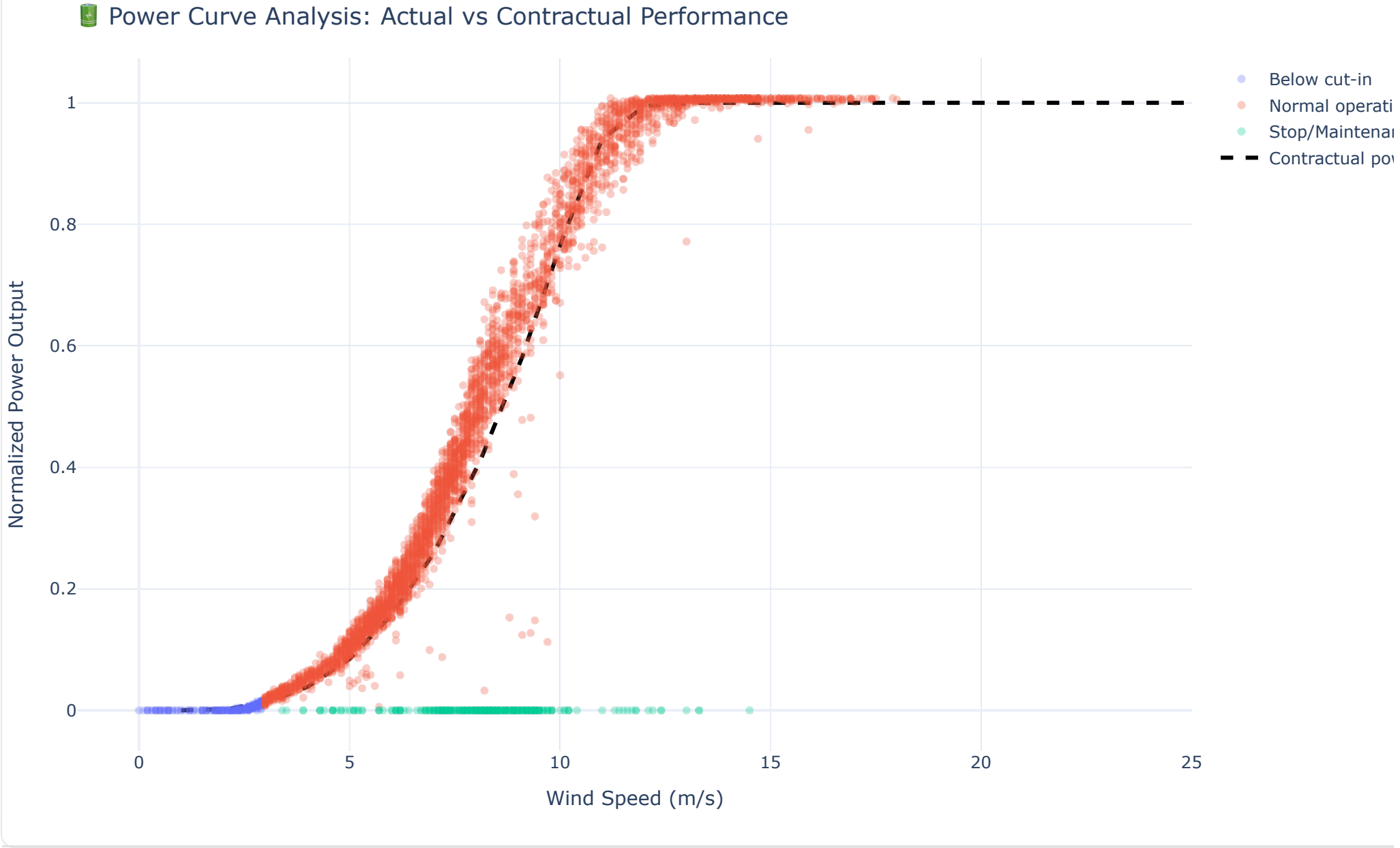
Date range 01 / 01 / 1900 - 31 / 01 / 1900

Wind speed filter (m/s)

Color by status

Point opacity

Show cc



Filtered Data Statistics

- **Records shown**: 4,323
- **Date range**: 1900-01-01 to 1900-01-31
- **Wind range**: 0.0 - 18.0 m/s
- **Status distribution**:
  - Normal operation: 3736 (86.4%)
  - Stop/Maintenance: 348 (8.0%)
  - Below cut-in: 239 (5.5%)