nationalgridESO

Draft Annual Load Factors for 2022/23 TNUoS Tariffs

For review by all generators

November 2021

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Summary of Annual Load Factors for the 2022/23 charging year

Executive summary

Please review the ALFs and provide your comments or feedback by TUESDAY 14th DECEMBER 2021

National Grid Electricity System Operator (NGESO) is responsible for calculating, billing and collecting the Transmission Network Use of System (TNUoS) charges from generators and suppliers for use of the transmission networks. The TNUoS charges are designed to recover the cost of installing and maintaining the transmission system in England, Wales, Scotland and offshore. The methodologies for TNUoS charges are defined in the Connection and Use of System Code (CUSC). One of the key parameters for the generator TNUoS charges is Annual Load Factors (ALFs).

This document contains the draft Annual Load Factors (ALFs) to be used in the calculation of final generator TNUoS tariffs for 2022/23, effective from 1 April 2022.

We use generation data from the past five years to calculate the load factor for each generator. The draft ALFs in this document are based on generation data between 2016/17 and 2020/21.

Where historic data is not available for a new or mothballed station, we use a generic ALF corresponding to the station's generation technology type.

The ALFs for each generator at station level, and the generic ALF for each generation technology type, are published below.

We invite all generators to review their specific ALF as calculated in table 1 below. You can check your ALF against your TEC using your output metering and your Final Physical Notifications.

Comments on the ALFs can be submitted until close of business Tuesday 14th December 2021. After this deadline, we will publish a revised and final version of the ALFs that will be used in the Final TNUoS tariffs for the 2022/23 charging year.

TNUoS Revenue team

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Draft Annual Load Factors for 2022/23

The table below shows the draft ALFs using data from the 2016/17 to 2020/21 charging years.

The column headers for each year reflect the charging year that began during that year. For example, "2020" refers to the 2020/21 charging year.

Table 1: Draft ALFs by generating station

Power Station	Technology	Yearly Load Factor Source					Yearly Load Factor Value					Specific ALF
		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	
ABERDEEN	Offshore_Wind	Generic	Generic	Partial	Actual	Actual	0.0000%	0.0000%	44.7745%	43.4877%	40.4600%	**42.9074%**
ABERTHAW	Coal	Actual	Actual	Actual	Actual	Actual	50.8335%	5.0742%	4.1987%	2.8387%	0.0000%	**4.0372%**
ACHRUACH	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	36.7140%	44.3464%	42.2005%	44.6235%	38.9476%	**41.8315%**
AFTON	Onshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	34.8738%	37.3713%	54.8712%	44.9021%	**45.7149%**
AIKENGALL II	Onshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	33.5082%	22.4459%	26.2386%	25.3400%	**24.6749%**
AN SUIDHE	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	34.0938%	41.2323%	36.2945%	38.0034%	36.6430%	**36.9803%**
ARECLEOCH	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	19.7246%	35.1728%	30.6827%	33.7507%	29.8557%	**31.4297%**
BAD A CHEO	Onshore_Wind	Generic	Generic	Partial	Actual	Actual	0.0000%	0.0000%	21.5538%	44.1803%	40.2060%	**35.3134%**
BAGLAN BAY	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	55.2030%	24.2891%	17.7390%	12.8208%	0.1390%	**18.2830%**
BARROW	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	44.2584%	47.0417%	39.0292%	41.0261%	36.8873%	**41.4379%**
BEATRICE	Offshore_Wind	Generic	Generic	Partial	Actual	Actual	0.0000%	0.0000%	51.8538%	62.4523%	47.4445%	**53.9168%**
BEAULY CASCADE	Hydro	Actual	Actual	Actual	Actual	Actual	30.4872%	21.9937%	34.5072%	38.3073%	33.6181%	**32.8708%**
BEINNEUN	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	30.9623%	25.8214%	37.9202%	37.8757%	39.9402%	**38.5787%**
BHLARAIDH	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	33.4339%	46.3209%	40.1955%	38.8473%	35.5105%	**41.7879%**
BLACK LAW	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	23.4623%	21.2137%	26.3658%	26.1492%	18.7236%	**23.6084%**
BLACKCRAIG WINDFARM	Onshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	36.0208%	40.3666%	50.2739%	48.9036%	**46.5147%**
BLACKLAW EXTENSION	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	13.1095%	30.4870%	33.9916%	35.2458%	30.8894%	**31.7893%**
BRIMSDOWN	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	45.0615%	27.6168%	34.1757%	48.5050%	4.9608%	**35.6180%**
BURBO BANK EXT	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	25.0233%	49.3850%	42.5220%	49.1381%	45.9610%	**45.8737%**
CARRAIG GHEAL	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	40.4211%	45.5371%	45.7472%	49.1331%	45.8985%	**45.7276%**
CARRINGTON	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	58.0115%	58.8066%	65.4275%	45.6708%	36.5051%	**54.1630%**
CLUNIE	Hydro	Actual	Actual	Actual	Actual	Actual	32.8297%	32.1699%	36.8500%	47.5977%	40.7445%	**36.8081%**
CLYDE (NORTH)	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	26.8858%	39.2619%	41.4890%	43.6042%	37.7586%	**39.5031%**
CLYDE (SOUTH)	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	34.8751%	39.1634%	38.7296%	26.6271%	36.3028%	**36.6358%**

Power Station	Technology	Yearly Load Factor Source					Yearly Load Factor Value					Specific ALF
		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	
CONNAHS QUAY	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	37.4588%	20.0846%	19.0546%	14.7379%	19.8650%	**19.6681%**
CONON CASCADE	Hydro	Actual	Actual	Actual	Actual	Actual	48.6782%	50.8547%	50.7941%	57.4034%	54.2900%	**51.9796%**
CORBY	CCGT_CHP	Generic	Partial	Actual	Actual	Actual	0.0000%	44.6503%	1.8650%	0.3397%	0.3494%	**0.8514%**
CORRIEGARTH	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	22.5645%	41.2013%	44.7484%	46.1902%	50.5594%	**47.1660%**
CORRIEMOILLIE	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	32.2316%	30.4210%	30.7985%	36.3718%	32.9303%	**33.3668%**
CORYTON	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	63.0383%	16.4022%	23.4777%	39.0899%	31.1732%	**31.2470%**
COTTAM	Coal	Actual	Actual	Actual	Actual	Actual	14.9387%	21.6580%	14.4319%	3.5301%	0.0000%	**10.9669%**
COTTAM DEVELOPMENT CENTRE	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	67.2482%	56.3007%	77.5270%	55.5832%	59.6052%	**61.0513%**
COUR	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	38.3247%	55.4273%	55.6107%	57.8770%	55.7018%	**56.3965%**
COWES	Gas_Oil	Actual	Actual	Actual	Actual	Actual	0.5319%	0.6942%	0.0395%	0.0884%	0.0740%	**0.2314%**
COWLEY	Pumped_Storage	Generic	Generic	Generic	Generic	Partial	0.0000%	0.0000%	0.0000%	0.0000%	7.6721%	**8.5788%**
CROSSDYKES	Onshore_Wind	Generic	Generic	Generic	Generic	Partial	0.0000%	0.0000%	0.0000%	0.0000%	28.1135%	**33.0420%**
CRUACHAN	Pumped_Storage	Actual	Actual	Actual	Actual	Actual	7.1914%	9.6225%	6.5778%	8.0284%	8.2655%	**7.8284%**
CRYSTAL RIG II	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	40.2679%	52.5802%	48.7267%	49.7918%	48.4995%	**49.0060%**
CRYSTAL RIG III	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	39.9503%	51.9020%	49.5314%	53.8704%	52.9482%	**52.9069%**
DAMHEAD CREEK	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	68.1119%	63.5108%	45.2453%	30.0390%	24.5035%	**46.2650%**
DEESIDE	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	27.1090%	20.8164%	0.0000%	0.0000%	0.0000%	**6.9388%**
DERSALLOCH	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	33.7728%	39.8576%	35.2052%	37.1058%	32.3152%	**37.3895%**
DIDCOT B	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	50.1358%	44.1234%	50.9938%	50.2420%	41.8806%	**48.1671%**
DIDCOT GTS	Gas_Oil	Actual	Actual	Actual	Actual	Actual	0.0452%	0.6337%	0.7115%	0.5130%	0.0737%	**0.4068%**
DINORWIG	Pumped_Storage	Actual	Actual	Actual	Actual	Actual	15.9596%	14.9467%	12.5027%	8.2963%	7.3817%	**11.9152%**
DORENELL	Onshore_Wind	Generic	Generic	Partial	Actual	Actual	0.0000%	0.0000%	39.7116%	54.8990%	50.4355%	**48.3487%**
DRAX	Coal	Actual	Actual	Actual	Actual	Actual	62.2705%	55.8896%	50.9593%	46.7591%	47.3862%	**51.4117%**
DUDGEON	Offshore_Wind	Partial	Actual	Actual	Actual	Actual	42.4791%	46.9782%	47.2525%	54.1115%	50.4436%	**50.6025%**
DUNGENESS B	Nuclear	Actual	Actual	Actual	Actual	Actual	79.3403%	68.2086%	39.8945%	0.0000%	0.0000%	**36.0344%**
DUNLAW EXTENSION	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	26.5549%	31.0840%	28.4604%	29.8704%	26.5288%	**28.2952%**
DUNMAGLASS	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	38.9713%	75.6936%	51.5228%	50.4246%	41.6275%	**59.2137%**
EAST ANGLIA 1	Offshore_Wind	Generic	Generic	Generic	Partial	Actual	0.0000%	0.0000%	0.0000%	30.2828%	49.0266%	**42.5085%**
EDINBANE WIND	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	32.5009%	34.5929%	34.9938%	32.6744%	30.1338%	**33.2561%**
ERROCHTY	Hydro	Actual	Actual	Actual	Actual	Actual	16.1775%	13.6081%	17.9492%	26.5126%	19.3928%	**17.8398%**
EWE HILL	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	33.3314%	33.1849%	32.9121%	36.6313%	29.5980%	**34.2428%**
FALLAGO	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	43.2176%	49.4158%	47.9232%	51.8467%	50.9745%	**49.4378%**
FARR WINDFARM	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	34.1766%	38.3046%	39.5693%	40.9761%	38.1431%	**38.6723%**
FASNAKYLE G1 & G3	Hydro	Actual	Actual	Actual	Actual	Actual	30.9768%	38.1673%	43.6554%	54.6486%	49.1345%	**43.6524%**

Power Station	Technology	Yearly Load Factor Source					Yearly Load Factor Value					Specific ALF
		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	
FAWLEY CHP	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	63.2006%	76.0793%	68.2899%	65.6292%	70.0968%	68.0053%
FFESTINIOG	Pumped_Storage	Actual	Actual	Actual	Actual	Actual	5.6749%	4.2118%	2.9504%	2.1464%	3.6192%	3.5938%
FIDDLERS FERRY	Coal	Actual	Actual	Actual	Actual	Actual	8.2478%	13.9908%	5.7753%	17.2438%	0.0000%	9.3380%
FINLARIG	Hydro	Actual	Actual	Actual	Actual	Actual	49.6402%	52.6415%	64.1387%	69.5043%	61.4982%	59.4262%
FOYERS	Pumped_Storage	Actual	Actual	Actual	Actual	Actual	11.3046%	14.5333%	14.9278%	7.6086%	12.5348%	12.7909%
FREASDAIL	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	32.5600%	38.9709%	40.4607%	42.0718%	38.5290%	40.5011%
GALAWHISTLE	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	34.9765%	42.4455%	47.4443%	50.0137%	49.1133%	48.8571%
GALLOPER	Offshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	54.7593%	53.8046%	54.2416%	51.7484%	53.2649%
GARRY CASCADE	Hydro	Actual	Actual	Actual	Actual	Actual	61.0498%	60.0010%	54.2012%	57.0471%	63.4954%	59.3659%
GLANDFORD BRIGG	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	2.7682%	1.8418%	1.0295%	0.6378%	0.1233%	1.1697%
GLEN APP	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	25.1373%	24.8393%	22.0870%	26.2184%	25.5772%	25.5450%
GLENDOE	Hydro	Actual	Actual	Actual	Actual	Actual	23.8605%	24.0105%	31.6076%	36.0951%	33.8791%	29.8324%
GLENMORISTON	Hydro	Actual	Actual	Actual	Actual	Actual	34.6709%	44.3960%	37.8283%	45.1829%	42.7433%	41.6558%
GORDONBUSH	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	50.4126%	34.1762%	38.6227%	41.4003%	31.2278%	38.0664%
GRAIN	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	53.8227%	39.7755%	50.2928%	49.2656%	46.8759%	48.8114%
GRANGEMOUTH	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	51.4558%	58.9786%	63.5659%	62.3434%	54.9758%	58.7659%
GREAT YARMOUTH	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	63.5120%	50.1521%	36.5911%	53.4446%	37.8027%	47.1331%
GREATER GABBARD	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	43.1132%	46.4939%	39.9735%	47.3707%	44.6564%	44.7545%
GRIFFIN WIND	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	25.8228%	28.8970%	27.3684%	27.5826%	24.2980%	26.9246%
GUNFLEET SANDS I	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	45.7940%	47.3019%	39.8080%	45.4945%	42.0515%	44.4467%
GUNFLEET SANDS II	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	43.9893%	46.9928%	39.6453%	45.0419%	41.8400%	43.6237%
GWYNT Y MOR	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	44.8323%	50.4031%	42.8331%	45.3165%	41.7255%	44.3273%
HADYARD HILL	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	31.4364%	34.0375%	31.2735%	33.5312%	29.9285%	32.0804%
HALSARY WIND FARM	Onshore_Wind	Generic	Generic	Generic	Generic	Partial	0.0000%	0.0000%	0.0000%	0.0000%	33.4644%	34.8256%
HARESTANES	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	22.5464%	29.0125%	23.8473%	29.0205%	27.9253%	26.9284%
HARTLEPOOL	Nuclear	Actual	Actual	Actual	Actual	Actual	78.0390%	80.6218%	85.4489%	78.3650%	82.6796%	80.5555%
HEYSHAM	Nuclear	Actual	Actual	Actual	Actual	Actual	79.6169%	85.1617%	77.3512%	81.9479%	72.3488%	79.6386%
HINKLEY POINT B	Nuclear	Actual	Actual	Actual	Actual	Actual	71.2265%	83.4643%	79.8462%	72.3339%	8.5019%	74.4689%
HORNSEA 1A	Offshore_Wind	Generic	Generic	Generic	Partial	Actual	0.0000%	0.0000%	0.0000%	35.7733%	50.0278%	44.6724%
HORNSEA 1B	Offshore_Wind	Generic	Generic	Partial	Actual	Actual	0.0000%	0.0000%	39.4929%	56.1660%	52.5372%	49.3987%
HORNSEA 1C	Offshore_Wind	Generic	Generic	Generic	Partial	Actual	0.0000%	0.0000%	0.0000%	45.3217%	50.9526%	48.1634%
HUMBER GATEWAY	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	59.7195%	54.9913%	46.8351%	50.3072%	47.4682%	50.9222%
HUNTERSTON	Nuclear	Actual	Actual	Actual	Actual	Actual	83.2939%	79.8644%	24.0813%	14.3125%	49.6717%	51.2058%
IMMINGHAM	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	71.9550%	64.3175%	72.9980%	69.2946%	69.7413%	70.3303%

Power Station	Technology	Yearly Load Factor Source					Yearly Load Factor Value					Specific ALF
		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	
INDIAN QUEENS	Gas_Oil	Actual	Actual	Actual	Actual	Actual	0.0847%	0.0740%	0.0288%	0.1789%	0.0430%	0.0672%
J G PEARS	Biomass	Generic	Generic	Actual	Actual	Actual	0.0000%	0.0000%	36.3135%	43.5479%	45.1644%	41.6752%
KEADBY	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	28.6076%	38.6957%	40.3687%	27.3173%	29.3689%	32.2241%
KEITH HILL	Onshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	36.9858%	23.8493%	24.7990%	22.2586%	23.6356%
KEMSLEY	CCGT_CHP	Generic	Generic	Generic	Generic	Partial	0.0000%	0.0000%	0.0000%	0.0000%	41.0930%	47.9369%
KILBRAUR	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	46.5342%	56.7501%	49.7699%	44.2180%	41.2281%	46.8407%
KILGALLIOCH	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	25.2739%	25.3254%	43.3442%	46.4978%	43.4111%	44.4177%
KILLIN CASCADE	Hydro	Actual	Actual	Actual	Actual	Actual	27.4962%	34.9231%	40.4764%	43.1565%	42.0620%	39.1538%
KILLINGHOLME (POWERGEN)	Gas_Oil	Generic	Partial	Actual	Actual	Actual	0.0000%	0.5489%	0.6139%	1.2782%	1.6444%	1.1789%
KINGS LYNN A	CCGT_CHP	Generic	Generic	Actual	Actual	Actual	0.0000%	0.0000%	0.4254%	20.9575%	51.7706%	24.3845%
KYPE MUIR	Onshore_Wind	Generic	Generic	Partial	Actual	Actual	0.0000%	0.0000%	27.7774%	42.8204%	35.5513%	35.3830%
LANGAGE	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	44.5413%	42.3368%	24.5591%	28.9836%	25.4374%	32.2526%
LINCS WIND FARM	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	44.5192%	51.0911%	46.7412%	50.8056%	48.3981%	48.6483%
LITTLE BARFORD	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	64.8597%	66.3067%	63.2342%	38.4787%	38.3298%	55.5242%
LOCHLUICHART	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	31.6897%	34.3322%	32.8475%	34.1454%	30.2399%	32.8942%
LONDON ARRAY	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	53.6245%	50.5515%	36.8539%	45.8936%	46.8827%	47.7759%
LYNEMOUTH	Biomass	Generic	Actual	Actual	Actual	Actual	0.0000%	1.0783%	85.6495%	90.7180%	87.1228%	87.8301%
MARCHWOOD	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	75.4248%	67.3692%	72.2737%	45.8482%	63.6469%	67.7633%
MARK HILL	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	21.9653%	31.0915%	28.6666%	31.8364%	27.8354%	29.1978%
MEDWAY	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	35.1505%	36.7261%	27.4290%	21.3610%	35.5113%	32.6969%
MIDDLE MUIR	Onshore_Wind	Generic	Generic	Partial	Actual	Actual	0.0000%	0.0000%	29.3669%	50.1156%	37.3334%	38.9386%
MILLENNIUM	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	44.9764%	53.6488%	54.1216%	54.8443%	45.2370%	51.0024%
MINNYGAP	Onshore_Wind	Generic	Actual	Actual	Actual	Actual	0.0000%	30.9962%	32.4279%	34.1156%	32.2366%	32.9267%
NANT	Hydro	Actual	Actual	Actual	Actual	Actual	30.6350%	34.9026%	34.0281%	38.0822%	31.3490%	33.4266%
NURSLING TERTIARY	Pumped_Storage	Generic	Generic	Generic	Generic	Partial	0.0000%	0.0000%	0.0000%	0.0000%	9.0074%	9.0239%
ORMONDE	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	41.2188%	37.7162%	40.8646%	42.8854%	39.5996%	40.5610%
PEMBROKE	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	77.6478%	70.2866%	70.5263%	63.4003%	60.9615%	68.0711%
PEN Y CYMOEDD	Onshore_Wind	Partial	Actual	Actual	Actual	Actual	26.9446%	36.0948%	33.2009%	38.5408%	36.6615%	37.0990%
PETERBOROUGH	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	1.7914%	0.4349%	0.4136%	0.5500%	0.7858%	0.5902%
PETERHEAD	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	42.2292%	65.7808%	61.5747%	50.7405%	45.1695%	52.4949%
POGBIE	Onshore_Wind	Generic	Generic	Partial	Actual	Actual	0.0000%	0.0000%	29.0769%	32.0583%	28.6354%	29.9235%
RACE BANK	Offshore_Wind	Partial	Actual	Actual	Actual	Actual	45.3062%	38.1978%	47.1320%	51.5222%	48.5914%	49.0819%
RAMPION	Offshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	40.9885%	35.4891%	35.3948%	46.9187%	39.2675%
RATCLIFFE-ON-SOAR	Coal	Actual	Actual	Actual	Actual	Actual	15.4657%	19.3780%	16.8536%	1.1881%	8.6794%	13.6662%

Power Station	Technology	Yearly Load Factor Source					Yearly Load Factor Value					Specific ALF
		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	
ROBIN RIGG EAST	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	50.5096%	42.5599%	34.4229%	40.0541%	40.1533%	40.9224%
ROBIN RIGG WEST	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	51.5383%	47.3991%	40.9494%	41.9934%	41.3967%	43.5964%
ROCKSAVAGE	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	58.6806%	29.8122%	35.6214%	34.7678%	28.4727%	33.4005%
RYE HOUSE	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	15.6538%	13.4736%	8.6393%	7.0222%	8.1726%	10.0951%
SALTEND	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	77.4019%	70.1596%	71.3266%	74.0812%	74.1271%	73.1783%
SANQUHAR	Onshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	35.2098%	50.9844%	57.9841%	52.5076%	53.8253%
SEABANK	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	41.6815%	55.4606%	32.6753%	22.3590%	27.1891%	33.8486%
SELLAFIELD	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	19.8588%	13.6007%	8.8320%	3.2368%	2.0667%	8.5565%
SEVERN POWER	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	64.4246%	55.6920%	39.5616%	26.2481%	9.2566%	40.5006%
SHERINGHAM SHOAL	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	46.9715%	54.3071%	50.7594%	49.0236%	45.7952%	48.9182%
SHOREHAM	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	68.9863%	64.2994%	12.0983%	7.2596%	26.1252%	34.1743%
SIZEWELL B	Nuclear	Actual	Actual	Actual	Actual	Actual	81.6359%	73.3708%	98.0180%	79.9515%	79.7295%	80.4390%
SLOY G2 & G3	Hydro	Actual	Actual	Actual	Actual	Actual	8.1782%	12.0303%	9.8246%	17.5169%	14.3504%	12.0685%
SOUTH HUMBER BANK	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	55.3419%	34.6174%	31.0569%	55.5443%	78.9930%	48.5012%
SPALDING	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	60.9748%	52.9683%	38.1850%	55.8932%	47.0122%	51.9579%
SPALDING ENERGY EXPANSION	CCGT_CHP	Generic	Generic	Generic	Partial	Actual	0.0000%	0.0000%	0.0000%	13.5062%	3.5577%	22.8076%
STAYTHORPE	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	65.7791%	52.0701%	60.3233%	56.1406%	41.6716%	56.1780%
STRATHY NORTH & SOUTH	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	36.1987%	40.2313%	34.0711%	38.3054%	34.4987%	36.3343%
STRONELAIRG	Onshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	37.5366%	48.4638%	47.6741%	33.0353%	43.0577%
SUTTON BRIDGE	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	38.0184%	29.1878%	22.3560%	26.4852%	4.0643%	26.0096%
TAYLORS LANE	Gas_Oil	Actual	Actual	Actual	Actual	Actual	0.8047%	1.1712%	0.1133%	0.0960%	0.3699%	0.4293%
TEES RENEWABLE	Biomass	Generic	Generic	Generic	Generic	Actual	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	28.7789%
THANET	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	33.7132%	38.5069%	35.8373%	41.2821%	39.0315%	37.7919%
TODDLEBURN	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	31.3435%	38.0158%	34.7062%	37.2691%	34.7073%	35.5609%
TORNESS	Nuclear	Actual	Actual	Actual	Actual	Actual	97.9942%	86.4413%	85.4632%	96.5546%	83.6090%	89.4864%
TRALORG	Onshore_Wind	Generic	Generic	Generic	Generic	Partial	0.0000%	0.0000%	0.0000%	0.0000%	26.5038%	32.5054%
TRITON KNOLL OFFSHORE WIND FARM	Offshore_Wind	Generic	Generic	Generic	Generic	Partial	0.0000%	0.0000%	0.0000%	0.0000%	8.5859%	35.0060%
USKMOUTH	Coal	Actual	Actual	Actual	Actual	Actual	24.3304%	0.1000%	0.0108%	0.0000%	0.0128%	0.0412%
WALNEY 4	Offshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	45.2033%	50.3338%	56.1017%	50.4266%	52.2874%
WALNEY I	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	47.4617%	55.9472%	41.6150%	46.5322%	44.2968%	46.0969%
WALNEY II	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	54.9727%	62.8290%	48.7292%	54.7220%	49.7557%	53.1501%
WALNEY III	Offshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	50.1762%	50.7716%	56.2050%	53.1360%	53.3709%
WEST BURTON	Coal	Actual	Actual	Actual	Actual	Actual	10.1071%	11.8199%	6.3690%	10.3006%	5.2432%	8.9256%
WEST BURTON B	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	54.2878%	63.2420%	62.8067%	53.4863%	40.1276%	56.8603%

Power Station	Technology	Yearly Load Factor Source					Yearly Load Factor Value					Specific ALF
		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	
WEST OF DUDDON SANDS	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	48.7691%	55.4034%	48.9209%	50.7437%	50.6867%	**50.1171%**
WESTERMOST ROUGH	Offshore_Wind	Actual	Actual	Actual	Actual	Actual	58.1061%	63.4740%	52.5501%	56.1661%	53.1495%	**55.8072%**
WHITELEE	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	27.2893%	29.6336%	30.7296%	31.3487%	28.2256%	**29.5296%**
WHITELEE EXTENSION	Onshore_Wind	Actual	Actual	Actual	Actual	Actual	23.5253%	25.1664%	26.6647%	28.4492%	27.0979%	**26.3097%**
WHITESIDE HILL	Onshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	38.3704%	55.0847%	60.3399%	56.3037%	**57.2428%**
WILTON	CCGT_CHP	Actual	Actual	Actual	Actual	Actual	14.4130%	15.5750%	21.4515%	17.1525%	28.2414%	**18.0597%**
WINDY STANDARD II	Onshore_Wind	Generic	Partial	Actual	Actual	Actual	0.0000%	43.2981%	49.4509%	53.4476%	52.5437%	**51.8141%**

Generic Annual Load Factors

Generic ALFs are used to fill in the gaps for a generator if it does not have a full three years' worth of generation history.

Table 2: Draft Generic ALFs for 2022/23

Technology	Generic ALF
Biomass	43.1684%
CCGT_CHP	51.3589%
Coal	14.0552%
Gas_Oil	0.4627%
Hydro	40.9203%
Nuclear	70.2612%
Offshore_Wind	48.2161%
Onshore_Wind	35.5062%
Pumped_Storage	9.0321%
Battery	9.0321%
Tidal	12.8000%
Wave	2.9000%
Solar	10.9000%

*Note: Owing to a lack of available actual data, the Generic ALF values for Wave, Tidal and Solar technologies are taken from the BEIS publication 'THE RENEWABLES OBLIGATION: Calculating the level of the Renewables Obligation for 2022/23'

Battery technology will continue to use the Generic ALF for "Pumped Storage" for the purpose of calculating generation TNUoS charges.

2

How are ALFs calculated?

The ALFs calculation

For each charging year 2016/17 to 2020/21 a Yearly Load Factor has been calculated using the higher of Metered Output (MO), Final Physical Notification (FPN) or zero in each half hour settlement period, divided by the sum of Transmission Entry Capacity (TEC), Short Term TEC (STTEC) and Limited Duration TEC (LDTEC) applicable in the same half hour.

All calculations are in local time, i.e. clock change days have 46 or 50 half hour settlement periods rather than the usual 48. STTEC and LDTEC are daily products so changes occur at midnight.

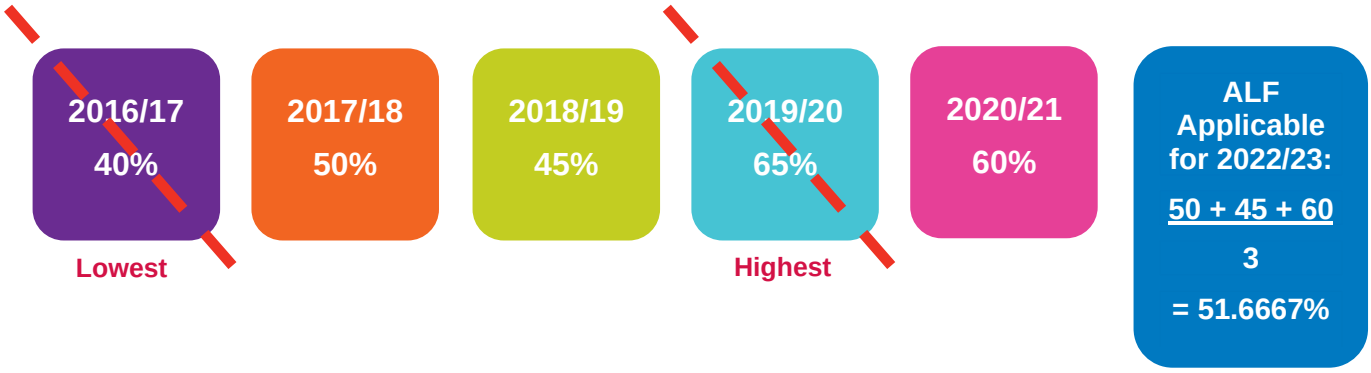
ALFs are calculated at station level, so where a station has multiple Balancing Mechanism Units (BMUs) representing generating units, station demand or trading site demand, the MO and FPN will be the aggregate of these.

For cascade hydro schemes, the ALF is calculated at scheme level, so the MO and FPN will be the aggregate of the BMU associated with the scheme. The scheme ALF is applied to each station in the scheme.

We have presented examples below with different scenarios that show how we calculate ALFs based on the number of years of generation data available for that station.

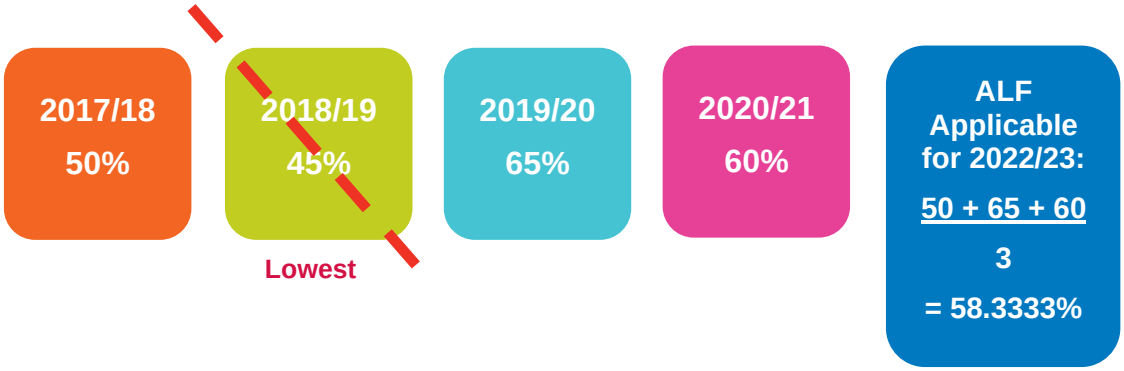
Five years of data

If your station has full ALF data over the past five years, then the highest and lowest years are discounted. Your ALF is then calculated by averaging the output from the remaining three years.



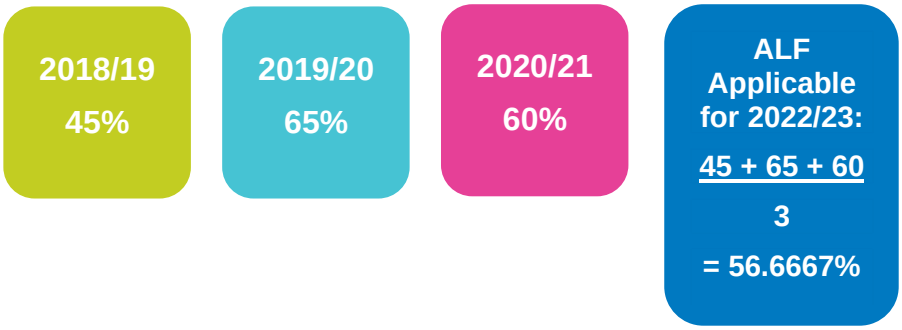
Four years of data

If your station has full ALF data over the past four years, then the lowest year is discounted. Your ALF is then calculated by averaging the output from the remaining three years. If you have four full years and one partial year, the partial year is ignored.



Three years of data

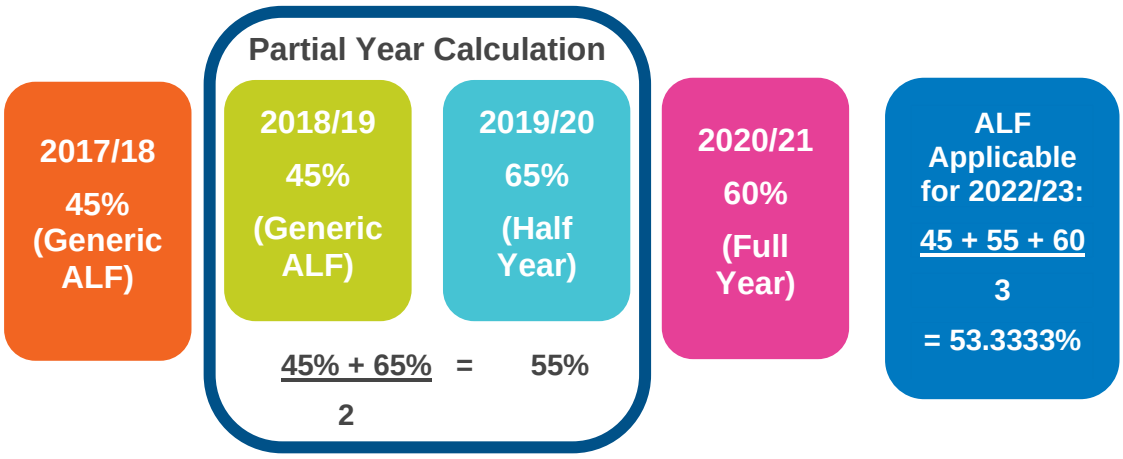
If your station has full ALF data over the past three years, then your ALF is the average of these three years. If you have three full years and one partial year, the partial year is ignored.



Fewer than three years of data

If your station has fewer than three full years of ALF data available, then any full years are used. Any gaps in the generation data from partial years are filled in using the generic ALF for the station's generation type.

In the example below it is assumed that there is half a year of generation data available from 2018/19.



Any years with no data at all are filled in full by the generic ALF until there are at least three years of data available.

Calculation of partial year ALFs

Each partial year ALF is calculated using a combination of actual station data and the generic ALF for the relevant year. This means that the partial year ALF will remain the same for each year that it is used, rather than being updated each year using the most recently calculated ALF.

For new generators, the station specific load factor is calculated from the earliest date on which TEC is held. The generic ALF is used for the period prior to TEC being held to form a 'partial' year of ALF data for that power station.

Commissioning years are determined by referring to Transmission Entry Capacity effective dates, Metered Output and Final Physical Notification data.

Generic ALFs

For a generator with no output data history, the generic ALF for that generation technology type will be used.

Generic ALFs are calculated from the ten most recently commissioned generators from each technology (where available).

Please note that as there is currently no data on which to base the calculation of a generic ALF for Battery technology, for the purposes of these calculations the value for "Pumped Storage" has been used.

Next Steps

If you have any comments or questions on these ALFs, please get in touch using the contact details below.

Please submit your comments by Tuesday 14th December. We will publish the final ALFs in January which will be used for TNUoS tariffs for 2022/23.

TNUoS Revenue team

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Generation charging principles

Generation charging principles

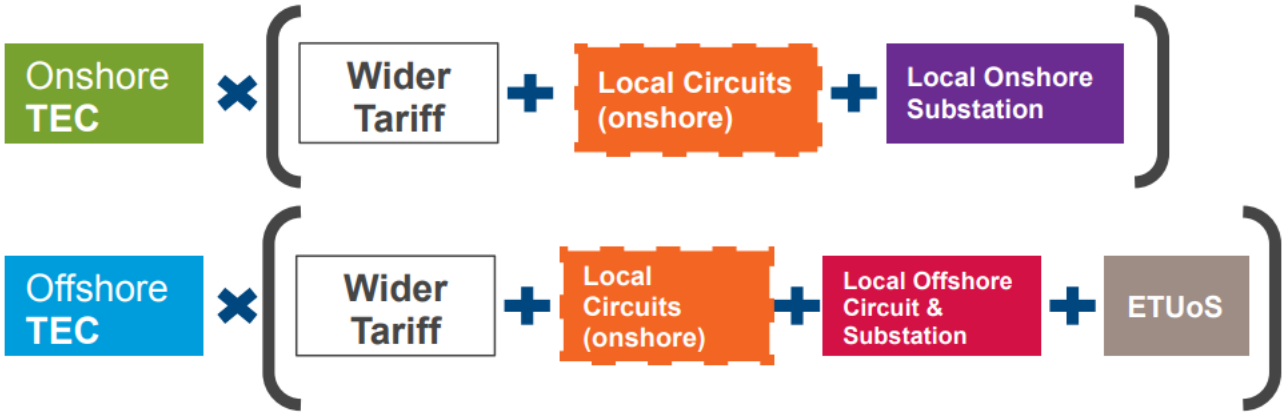
Generation charging principles

Transmission Network Use of System Charges (TNUoS) recover the money that GB Transmission Owners (TOs) spend on building, owning and maintaining transmission assets. Generators and suppliers are set charges which differ depending on where in the country they are located, and also by how they use the transmission network. TNUoS tariffs are calculated, set and billed by National Grid Electricity System Operator (NGESO), who recover revenue from generators and suppliers and pay it to the TOs.

Generators which pay generation TNUoS will be charged several components, depending on their characteristics. The wider tariff applies differently depending on several factors, and the local elements differ according to the specific arrangements by which the generator is connected to the transmission network.

Different charges may apply to onshore generators compared to offshore generators.

The wider and local components are shown below



All components of TNUoS tariffs are multiplied by the TEC of the generator to calculate the annual TNUoS liability.

There are four factors that affect what charges apply to each generator:

- **TEC**: the amount of capacity (in kW) that the generator can use to connect to the transmission system according to their connection agreement
- **Geographic location**: currently there are 27 generation zones in Great Britain; this determines the wider tariff that applies to the generator
- **Generator fuel type:** whether a generator is gas-fired or wind powered, for example, will determine how the wider tariff applies to them. Where a generator is new or recently commissioned and has limited or no data available, a generic ALF is used (dictated by the fuel type).
- **Connection voltage:** generators connecting at 400kV and 275kV in England and Wales, or at 400kV, 275kV and 132kV in Scotland are directly connected to the electricity transmission system, and so will be charged TNUoS. Generators connected at lower voltages are embedded, and will pay TNUoS if they have 100MW or more TEC.

The wider tariff

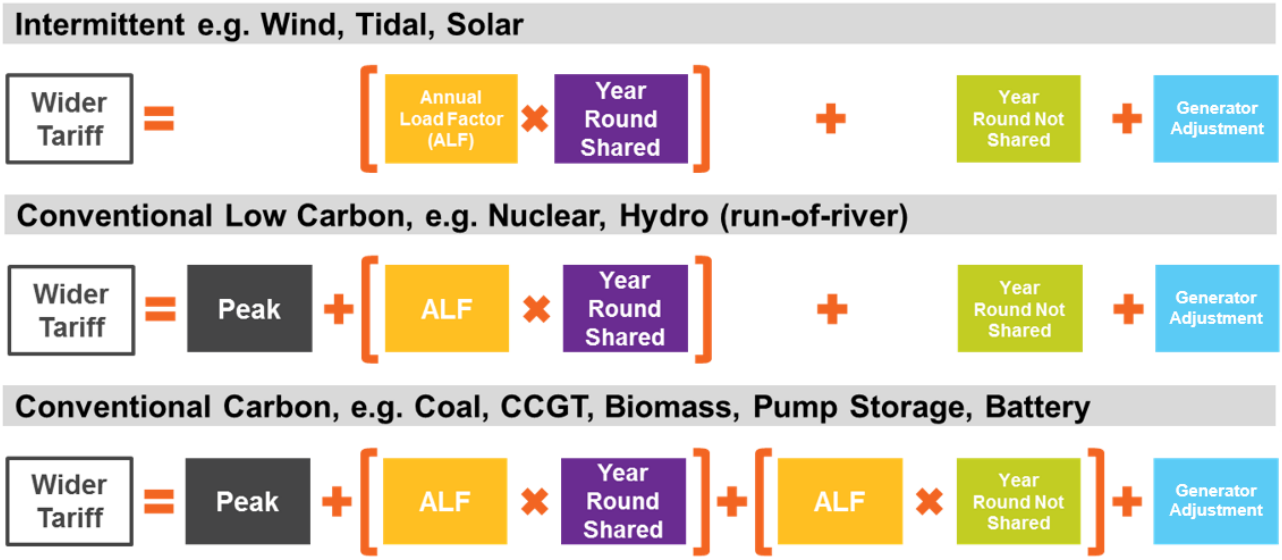
The wider tariff is made up of several parts to reflect the cost of different generator types connecting to the transmission system in different parts of the country.

There are four parts that make up the wider tariff: **The Peak**, **Year Round Shared**, **Year Round Not Shared**, and the **Adjustment** These apply differently to each generator, depending on the type of generator.

The Peak element is paid only by generators which are designed to run at Peak times. The Year Round Elements are paid by all generators to reflect year round system usage. Depending on the generator classification, some of the Year Round elements are multiplied by the **Annual Load Factor (ALF)** of the generator.

The Adjustment is a non-locational element and so is the same in every zone.

How these components apply to different generators is represented in the diagram below.



Generation classifications

All generators are classified according to how they use the transmission system:

- **Intermittent**: these generators are unable to control when they run, instead they run when their fuel is available. They are unlikely to be near full capacity at peak times.
- **Conventional Low Carbon**: these generators are conventional generators which are designed to be run as baseload, but they are less controllable than other types of generator. This could be because their fuel type dictates when they must run, or because they are very difficult to switch off. They are very likely to be generating at peak times.
- **Conventional Carbon**: these generators are more easily controllable than other generators and can be instructed to increase or decrease their output easily. They will almost certainly be running at peak times as their flexibility means they can run at times when electricity prices are highest.

Battery storage is treated the same as Pump Storage, and so is considered to be a Conventional Carbon generator.

Solar, Wave and Tidal would be considered as an Intermittent generator.

For more in depth guidance on TNUoS Charging, please visit the NGESO website.