nationalgridESO

# Draft Annual Load Factors for 2021/22 TNUoS Tariffs

## For review by all generators

November 2020

# Contents

# 1

# Summary of Annual Load Factors for the 2021/22 charging year

# Executive summary

**Please review the ALFs and provide your comments or feedback by WEDNESDAY 23rd DECEMBER 2020**

National Grid Electricity System Operator (NGESO) is responsible for calculating, billing and collecting the Transmission Network Use of System (TNUoS) charges from transmission customers for the electricity industry in the GB. The TNUoS charges are designed to recover the allowed revenue set by Ofgem for the Electricity Transmission Owners (ETO) to fund the ETOs to install and maintain the transmission networks. 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 2021/22, effective from 1 April 2021.

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 2015/16 and 2019/20.

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 Wednesday 23rd December 2020. 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 2021/22 charging year.

**TNUoS Revenue team**

**E** TNUoS.Queries@nationalgrideso.com

**T** 01926 654633

# Draft Annual Load Factors for 2021/22

## The table below shows the draft ALFs using data from the 2015/16 to 2019/20 charging years.

The column headers for each year reflect the charging year that began during that year. For example, "2019" refers to the 2019/20 charging year.

**Table 1: Draft ALFs by generating station**

| Power Station | Technology | Yearly Load Factor Source | | | | | Yearly Load Factor Value | | | | | Specific ALF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2015 | 2016 | 2017 | 2018 | 2019 | |
| ABERDEEN | Offshore_Wind | Generic | Generic | Generic | Partial | Actual | 0.0000% | 0.0000% | 0.0000% | 44.7745% | 43.4877% | 45.9201% |
| ABERTHAW | Coal | Actual | Actual | Actual | Actual | Actual | 54.2611% | 50.8335% | 5.0742% | 4.1987% | 2.8387% | 20.0355% |
| ACHRUACH | Onshore_Wind | Partial | Actual | Actual | Actual | Actual | 33.6464% | 36.7140% | 44.3464% | 42.2005% | 44.6235% | 43.7235% |
| AFTON | Onshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 34.8738% | 37.3713% | 54.8712% | 42.3721% |
| AIKENGALL II | Onshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 33.5082% | 22.4459% | 26.2386% | 27.3976% |
| AN SUIDHE | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 35.4900% | 34.0938% | 41.2323% | 36.2945% | 38.0034% | 36.5960% |
| ARECLEOCH | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 36.8612% | 19.7246% | 35.1728% | 30.6827% | 33.7507% | 33.2021% |
| BAD A CHEO | Onshore_Wind | Generic | Generic | Generic | Partial | Actual | 0.0000% | 0.0000% | 0.0000% | 21.5538% | 44.1803% | 33.9353% |
| BAGLAN BAY | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 29.1228% | 55.2030% | 24.2891% | 17.7390% | 12.8208% | 23.7170% |
| BARROW | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 47.1791% | 44.2584% | 47.0417% | 39.0292% | 41.0261% | 44.1087% |
| BARRY | - | Actual | Partial | Actual | Actual | Actual | 2.1727% | 0.0000% | 0.5407% | 0.0368% | 0.0000% | 0.9167% |
| BEATRICE | Offshore_Wind | Generic | Generic | Generic | Partial | Actual | 0.0000% | 0.0000% | 0.0000% | 51.8538% | 62.4523% | 54.6014% |
| BEAULY CASCADE | Hydro | Actual | Actual | Actual | Actual | Actual | 35.0094% | 30.4872% | 21.9937% | 34.5072% | 38.3073% | 33.3346% |
| BEINNEUN | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 30.9623% | 25.8214% | 37.9202% | 37.8757% | 33.8724% |
| BHLARAIDH | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 33.4339% | 46.3209% | 40.1955% | 38.8473% | 41.7879% |
| BLACK LAW | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 26.9035% | 23.4623% | 21.2137% | 26.3658% | 26.1492% | 25.3258% |
| BLACKCRAIG WINDFARM | Onshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 36.0208% | 40.3666% | 50.2739% | 42.2204% |
| BLACKLAW EXTENSION | Onshore_Wind | Partial | Actual | Actual | Actual | Actual | 33.4635% | 13.1095% | 30.4870% | 33.9916% | 35.2458% | 33.2415% |
| BRIMSDOWN | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 16.4463% | 45.0615% | 27.6168% | 34.1757% | 48.5050% | 35.6180% |
| BURBO BANK EXT | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 16.7781% | 25.0233% | 49.3850% | 42.5220% | 49.1381% | 38.8945% |
| CARRAIG GHEAL | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 45.6254% | 40.4211% | 45.5371% | 45.7472% | 49.1331% | 45.6366% |
| CARRINGTON | CCGT_CHP | Partial | Actual | Actual | Actual | Actual | 38.7318% | 58.0115% | 58.8066% | 65.4275% | 45.6708% | 60.7485% |
| CLUNIE | Hydro | Actual | Actual | Actual | Actual | Actual | 47.9711% | 32.8297% | 32.1699% | 36.8500% | 47.5977% | 39.0925% |
| CLYDE (NORTH) | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 41.4120% | 26.8858% | 39.2619% | 41.4890% | 43.6042% | 40.7209% |

| Power Station | Technology | Yearly Load Factor Source | | | | | Yearly Load Factor Value | | | | | Specific ALF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2015 | 2016 | 2017 | 2018 | 2019 | |
| CLYDE (SOUTH) | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 39.9615% | 34.8751% | 39.1634% | 38.7296% | 26.6271% | 37.5893% |
| CONNAHS QUAY | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 28.2713% | 37.4588% | 20.0846% | 19.0546% | 14.7379% | 22.4702% |
| CONON CASCADE | Hydro | Actual | Actual | Actual | Actual | Actual | 58.9860% | 48.6782% | 50.8547% | 50.7941% | 57.4034% | 53.0174% |
| CORBY | CCGT_CHP | Actual | Generic | Partial | Actual | Actual | 4.5411% | 0.0000% | 44.6503% | 1.8650% | 0.3397% | 2.2486% |
| CORRIEGARTH | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 22.5645% | 41.2013% | 44.7484% | 46.1902% | 44.0467% |
| CORRIEMOILLIE | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 32.2316% | 30.4210% | 30.7985% | 36.3718% | 32.5304% |
| CORYTON | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 26.4000% | 63.0383% | 16.4022% | 23.4777% | 39.0899% | 29.6559% |
| COTTAM | Coal | Actual | Actual | Actual | Actual | Actual | 34.4157% | 14.9387% | 21.6580% | 14.4319% | 3.5301% | 17.0095% |
| COTTAM DEVELOPMENT CENTRE | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 28.2382% | 67.2482% | 56.3007% | 77.5270% | 55.5832% | 59.7107% |
| COUR | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 38.3247% | 55.4273% | 55.6107% | 57.8770% | 56.3050% |
| COWES | Gas_Oil | Actual | Actual | Actual | Actual | Actual | 0.4912% | 0.5319% | 0.6942% | 0.0395% | 0.0884% | 0.3705% |
| CRUACHAN | Pumped_Storage | Actual | Actual | Actual | Actual | Actual | 8.8673% | 7.1914% | 9.6225% | 6.5778% | 8.0284% | 8.0290% |
| CRYSTAL RIG II | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 48.3836% | 40.2679% | 52.5802% | 48.7267% | 49.7918% | 48.9674% |
| CRYSTAL RIG III | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 39.9503% | 51.9020% | 49.5314% | 53.8704% | 51.7679% |
| DAMHEAD CREEK | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 64.8983% | 68.1119% | 63.5108% | 45.2453% | 30.0390% | 57.8848% |
| DEESIDE | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 17.4579% | 27.1090% | 20.8164% | 0.0000% | 0.0000% | 12.7581% |
| DERSALLOCH | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 33.7728% | 39.8576% | 35.2052% | 37.1058% | 37.3895% |
| DIDCOT B | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 41.1389% | 50.1358% | 44.1234% | 50.9938% | 50.2420% | 48.1671% |
| DIDCOT GTS | Gas_Oil | Actual | Actual | Actual | Actual | Actual | 0.4861% | 0.0452% | 0.6337% | 0.7115% | 0.5130% | 0.5443% |
| DINORWIG | Pumped_Storage | Actual | Actual | Actual | Actual | Actual | 14.6353% | 15.9596% | 14.9467% | 12.5027% | 8.2963% | 14.0282% |
| DORENELL | Onshore_Wind | Generic | Generic | Generic | Partial | Actual | 0.0000% | 0.0000% | 0.0000% | 39.7116% | 54.8990% | 43.5608% |
| DRAX | Coal | Actual | Actual | Actual | Actual | Actual | 76.2030% | 62.2705% | 55.8896% | 50.9593% | 46.7591% | 56.3731% |
| DUDGEON | Offshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 42.4791% | 46.9782% | 47.2525% | 54.1115% | 49.4474% |
| DUNGENESS B | Nuclear | Actual | Actual | Actual | Actual | Actual | 70.7617% | 79.3403% | 68.2086% | 39.8945% | 0.0000% | 59.6216% |
| DUNLAW EXTENSION | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 29.1203% | 26.5549% | 31.0840% | 28.4604% | 29.8704% | 29.1504% |
| DUNMAGLASS | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 38.9713% | 75.6936% | 51.5228% | 50.4246% | 59.2137% |
| EAST ANGLIA 1 | Offshore_Wind | Generic | Generic | Generic | Generic | Partial | 0.0000% | 0.0000% | 0.0000% | 0.0000% | 30.2828% | 43.0930% |
| EDINBANE WIND | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 35.5937% | 32.5009% | 34.5929% | 34.9938% | 32.6744% | 34.0870% |
| ERROCHTY | Hydro | Actual | Actual | Actual | Actual | Actual | 28.1507% | 16.1775% | 13.6081% | 17.9492% | 26.5126% | 20.2131% |
| EWE HILL | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 33.3314% | 33.1849% | 32.9121% | 36.6313% | 34.2428% |
| FALLAGO | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 55.7992% | 43.2176% | 49.4158% | 47.9232% | 51.8467% | 49.7286% |
| FARR WINDFARM | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 40.9963% | 34.1766% | 38.3046% | 39.5693% | 40.9761% | 39.6166% |
| FASNAKYLE G1 & G3 | Hydro | Actual | Actual | Actual | Actual | Actual | 53.1573% | 30.9768% | 38.1673% | 43.6554% | 54.6486% | 44.9933% |
| FAWLEY CHP | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 57.6978% | 63.2006% | 76.0793% | 68.2899% | 65.6292% | 65.7066% |

| Power Station | Technology | Yearly Load Factor Source | | | | | Yearly Load Factor Value | | | | | Specific ALF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2015 | 2016 | 2017 | 2018 | 2019 | |
| FFESTINIOG | Pumped_Storage | Actual | Actual | Actual | Actual | Actual | 3.4113% | 5.6749% | 4.2118% | 2.9504% | 2.1464% | 3.5245% |
| FIDDLERS FERRY | Coal | Actual | Actual | Actual | Actual | Actual | 27.4591% | 8.2478% | 13.9908% | 5.7753% | 17.2438% | 13.1608% |
| FINLARIG | Hydro | Actual | Actual | Actual | Actual | Actual | 65.1349% | 49.6402% | 52.6415% | 64.1387% | 69.5043% | 60.6384% |
| FOYERS | Pumped_Storage | Actual | Actual | Actual | Actual | Actual | 15.4323% | 11.3046% | 14.5333% | 14.9278% | 7.6086% | 13.5886% |
| FREASDAIL | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 32.5600% | 38.9709% | 40.4607% | 42.0718% | 40.5011% |
| GALAWHISTLE | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 34.9765% | 42.4455% | 47.4443% | 50.0137% | 46.6345% |
| GALLOPER | Offshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 54.7593% | 53.8046% | 54.2416% | 54.2685% |
| GARRY CASCADE | Hydro | Actual | Actual | Actual | Actual | Actual | 60.2772% | 61.0498% | 60.0010% | 54.2012% | 57.0471% | 59.1084% |
| GLANDFORD BRIGG | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 1.8191% | 2.7682% | 1.8418% | 1.0295% | 0.6378% | 1.5635% |
| GLEN APP | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 25.1373% | 24.8393% | 22.0870% | 26.2184% | 24.3816% |
| GLENDOE | Hydro | Actual | Actual | Actual | Actual | Actual | 34.8532% | 23.8605% | 24.0105% | 31.6076% | 36.0951% | 30.1571% |
| GLENMORISTON | Hydro | Actual | Actual | Actual | Actual | Actual | 50.6921% | 34.6709% | 44.3960% | 37.8283% | 45.1829% | 42.4690% |
| GORDONBUSH | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 47.7161% | 50.4126% | 34.1762% | 38.6227% | 41.4003% | 42.5797% |
| GRAIN | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 39.7895% | 53.8227% | 39.7755% | 50.2928% | 49.2656% | 46.4493% |
| GRANGEMOUTH | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 59.8274% | 51.4558% | 58.9786% | 63.5659% | 62.3434% | 60.3831% |
| GREAT YARMOUTH | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 59.8957% | 63.5120% | 50.1521% | 36.5911% | 53.4446% | 54.4974% |
| GREATER GABBARD | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 50.2468% | 43.1132% | 46.4939% | 39.9735% | 47.3707% | 45.6592% |
| GRIFFIN WIND | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 31.0284% | 25.8228% | 28.8970% | 27.3684% | 27.5826% | 27.9493% |
| GUNFLEET SANDS I | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 50.4650% | 45.7940% | 47.3019% | 39.8080% | 45.4945% | 46.1968% |
| GUNFLEET SANDS II | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 49.0521% | 43.9893% | 46.9928% | 39.6453% | 45.0419% | 45.3413% |
| GWYNT Y MOR | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 63.1276% | 44.8323% | 50.4031% | 42.8331% | 45.3165% | 46.8506% |
| HADYARD HILL | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 36.6527% | 31.4364% | 34.0375% | 31.2735% | 33.5312% | 33.0017% |
| HARESTANES | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 27.8093% | 22.5464% | 29.0125% | 23.8473% | 29.0205% | 26.8897% |
| HARTLEPOOL | Nuclear | Actual | Actual | Actual | Actual | Actual | 53.8666% | 78.0390% | 80.6218% | 85.4489% | 78.3650% | 79.0086% |
| HEYSHAM | Nuclear | Actual | Actual | Actual | Actual | Actual | 72.7344% | 79.6169% | 85.1617% | 77.3512% | 81.9479% | 79.6386% |
| HINKLEY POINT B | Nuclear | Actual | Actual | Actual | Actual | Actual | 67.6412% | 71.2265% | 83.4643% | 79.8462% | 72.3339% | 74.4689% |
| HORNSEA 1A | Offshore_Wind | Generic | Generic | Generic | Generic | Partial | 0.0000% | 0.0000% | 0.0000% | 0.0000% | 35.7733% | 44.9232% |
| HORNSEA 1B | Offshore_Wind | Generic | Generic | Generic | Partial | Actual | 0.0000% | 0.0000% | 0.0000% | 39.4929% | 56.1660% | 48.3857% |
| HORNSEA 1C | Offshore_Wind | Generic | Generic | Generic | Generic | Partial | 0.0000% | 0.0000% | 0.0000% | 0.0000% | 45.3217% | 48.1060% |
| HUMBER GATEWAY | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 62.9631% | 59.7195% | 54.9913% | 46.8351% | 50.3072% | 55.0060% |
| HUNTERSTON | Nuclear | Actual | Actual | Actual | Actual | Actual | 82.1786% | 83.2939% | 79.8644% | 24.0813% | 14.3125% | 62.0414% |
| IMMINGHAM | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 69.4686% | 71.9550% | 64.3175% | 72.9980% | 69.2946% | 70.2394% |
| INDIAN QUEENS | Gas_Oil | Actual | Actual | Actual | Actual | Actual | 0.0723% | 0.0847% | 0.0740% | 0.0288% | 0.1789% | 0.0770% |
| J G PEARS | Biomass | Generic | Generic | Generic | Actual | Actual | 0.0000% | 0.0000% | 0.0000% | 36.3135% | 43.5479% | 43.1337% |

| Power Station | Technology | Yearly Load Factor Source | | | | | Yearly Load Factor Value | | | | | Specific ALF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2015 | 2016 | 2017 | 2018 | 2019 | |
| KEADBY | CCGT_CHP | Partial | Actual | Actual | Actual | Actual | 35.1858% | 28.6076% | 38.6957% | 40.3687% | 27.3173% | 35.8907% |
| KEITH HILL | Onshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 36.9858% | 23.8493% | 24.7990% | 28.5447% |
| KILBRAUR | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 50.3807% | 46.5342% | 56.7501% | 49.7699% | 44.2180% | 48.8949% |
| KILGALLIOCH | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 25.2739% | 25.3254% | 43.3442% | 46.4978% | 38.3891% |
| KILLIN CASCADE | Hydro | Actual | Actual | Actual | Actual | Actual | 53.2348% | 27.4962% | 34.9231% | 40.4764% | 43.1565% | 39.5187% |
| KILLINGHOLME (POWERGEN) | Gas_Oil | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 0.5489% | 0.6139% | 1.2782% | 0.8137% |
| KINGS LYNN A | CCGT_CHP | Generic | Generic | Generic | Actual | Actual | 0.0000% | 0.0000% | 0.0000% | 0.4254% | 20.9575% | 24.1488% |
| KYPE MUIR | Onshore_Wind | Generic | Generic | Generic | Partial | Actual | 0.0000% | 0.0000% | 0.0000% | 27.7774% | 42.8204% | 35.5565% |
| LANGAGE | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 16.5310% | 44.5413% | 42.3368% | 24.5591% | 28.9836% | 31.9598% |
| LINCS WIND FARM | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 49.1306% | 44.5192% | 51.0911% | 46.7412% | 50.8056% | 48.8925% |
| LITTLE BARFORD | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 39.9829% | 64.8597% | 66.3067% | 63.2342% | 38.4787% | 56.0256% |
| LOCHLUICHART | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 29.2663% | 31.6897% | 34.3322% | 32.8475% | 34.1454% | 32.8942% |
| LONDON ARRAY | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 66.8682% | 53.6245% | 50.5515% | 36.8539% | 45.8936% | 50.0232% |
| LYNEMOUTH | Biomass | Generic | Generic | Actual | Actual | Actual | 0.0000% | 0.0000% | 1.0783% | 85.6495% | 90.7180% | 59.1486% |
| MARCHWOOD | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 55.0879% | 75.4248% | 67.3692% | 72.2737% | 45.8482% | 64.9103% |
| MARK HILL | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 34.0227% | 21.9653% | 31.0915% | 28.6666% | 31.8364% | 30.5315% |
| MEDWAY | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 34.1799% | 35.1505% | 36.7261% | 27.4290% | 21.3610% | 32.2531% |
| MIDDLE MUIR | Onshore_Wind | Generic | Generic | Generic | Partial | Actual | 0.0000% | 0.0000% | 0.0000% | 29.3669% | 50.1156% | 38.5181% |
| MILLENNIUM | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 48.4038% | 44.9764% | 53.6488% | 54.1216% | 54.8443% | 52.0580% |
| MINNYGAP | Onshore_Wind | Generic | Generic | Actual | Actual | Actual | 0.0000% | 0.0000% | 30.9962% | 32.4279% | 34.1156% | 32.5132% |
| NANT | Hydro | Actual | Actual | Actual | Actual | Actual | 37.3788% | 30.6350% | 34.9026% | 34.0281% | 38.0822% | 35.4365% |
| ORMONDE | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 47.1986% | 41.2188% | 37.7162% | 40.8646% | 42.8854% | 41.6563% |
| PEMBROKE | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 64.5596% | 77.6478% | 70.2866% | 70.5263% | 63.4003% | 68.4575% |
| PEN Y CYMOEDD | Onshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 26.9446% | 36.0948% | 33.2009% | 38.5408% | 35.9455% |
| PETERBOROUGH | CCGT_CHP | Partial | Actual | Actual | Actual | Actual | 4.1032% | 1.7914% | 0.4349% | 0.4136% | 0.5500% | 0.9254% |
| PETERHEAD | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 23.3813% | 42.2292% | 65.7808% | 61.5747% | 50.7405% | 51.5148% |
| POGBIE | Onshore_Wind | Generic | Generic | Generic | Partial | Actual | 0.0000% | 0.0000% | 0.0000% | 29.0769% | 32.0583% | 32.4024% |
| RACE BANK | Offshore_Wind | Generic | Partial | Actual | Actual | Actual | 0.0000% | 45.3062% | 38.1978% | 47.1320% | 51.5222% | 45.6173% |
| RAMPION | Offshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 40.9885% | 35.4891% | 35.3948% | 37.2908% |
| RATCLIFFE-ON-SOAR | Coal | Actual | Actual | Actual | Actual | Actual | 19.6814% | 15.4657% | 19.3780% | 16.8536% | 1.1881% | 17.2324% |
| ROBIN RIGG EAST | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 51.9700% | 50.5096% | 42.5599% | 34.4229% | 40.0541% | 44.3745% |
| ROBIN RIGG WEST | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 56.0881% | 51.5383% | 47.3991% | 40.9494% | 41.9934% | 46.9769% |
| ROCKSAVAGE | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 19.8061% | 58.6806% | 29.8122% | 35.6214% | 34.7678% | 33.4005% |
| RYE HOUSE | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 7.7906% | 15.6538% | 13.4736% | 8.6393% | 7.0222% | 9.9678% |

| Power Station | Technology | Yearly Load Factor Source | | | | | Yearly Load Factor Value | | | | | Specific ALF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2015 | 2016 | 2017 | 2018 | 2019 | |
| SALTEND | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 55.6228% | 77.4019% | 70.1596% | 71.3266% | 74.0812% | 71.8558% |
| SANQUHAR | Onshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 35.2098% | 50.9844% | 57.9841% | 48.0594% |
| SEABANK | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 27.2136% | 41.6815% | 55.4606% | 32.6753% | 22.3590% | 33.8568% |
| SELLAFIELD | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 28.6790% | 19.8588% | 13.6007% | 8.8320% | 3.2368% | 14.0972% |
| SEVERN POWER | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 18.3226% | 64.4246% | 55.6920% | 39.5616% | 26.2481% | 40.5006% |
| SHERINGHAM SHOAL | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 53.6184% | 46.9715% | 54.3071% | 50.7594% | 49.0236% | 51.1338% |
| SHOREHAM | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 48.9514% | 68.9863% | 64.2994% | 12.0983% | 7.2596% | 41.7830% |
| SIZEWELL B | Nuclear | Actual | Actual | Actual | Actual | Actual | 98.7826% | 81.6359% | 73.3708% | 98.0180% | 79.9515% | 86.5351% |
| SLOY G2 & G3 | Hydro | Actual | Actual | Actual | Actual | Actual | 13.9439% | 8.1782% | 12.0303% | 9.8246% | 17.5169% | 11.9329% |
| SOUTH HUMBER BANK | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 48.6753% | 55.3419% | 34.6174% | 31.0569% | 55.5443% | 46.2116% |
| SPALDING | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 47.9407% | 60.9748% | 52.9683% | 38.1850% | 55.8932% | 52.2674% |
| SPALDING ENERGY EXPANSION | CCGT_CHP | Generic | Generic | Generic | Generic | Partial | 0.0000% | 0.0000% | 0.0000% | 0.0000% | 13.5062% | 38.5444% |
| STAYTHORPE | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 69.4422% | 65.7791% | 52.0701% | 60.3233% | 56.1406% | 60.7477% |
| STRATHY NORTH & SOUTH | Onshore_Wind | Partial | Actual | Actual | Actual | Actual | 49.6340% | 36.1987% | 40.2313% | 34.0711% | 38.3054% | 38.2451% |
| STRONELAIRG | Onshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 37.5366% | 48.4638% | 47.6741% | 44.5581% |
| SUTTON BRIDGE | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 13.1999% | 38.0184% | 29.1878% | 22.3560% | 26.4852% | 26.0096% |
| TAYLORS LANE | Gas_Oil | Actual | Actual | Actual | Actual | Actual | 0.1708% | 0.8047% | 1.1712% | 0.1133% | 0.0960% | 0.3629% |
| THANET | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 41.3434% | 33.7132% | 38.5069% | 35.8373% | 41.2821% | 38.5421% |
| TODDLEBURN | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 35.0823% | 31.3435% | 38.0158% | 34.7062% | 37.2691% | 35.6859% |
| TORNESS | Nuclear | Actual | Actual | Actual | Actual | Actual | 85.7725% | 97.9942% | 86.4413% | 85.4632% | 96.5546% | 89.5895% |
| USKMOUTH | Coal | Actual | Actual | Actual | Actual | Actual | 25.5184% | 24.3304% | 0.1000% | 0.0108% | 0.0000% | 8.1471% |
| WALNEY 4 | Offshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 45.2033% | 50.3338% | 56.1017% | 50.5463% |
| WALNEY I | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 50.7535% | 47.4617% | 55.9472% | 41.6150% | 46.5322% | 48.2491% |
| WALNEY II | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 35.7988% | 54.9727% | 62.8290% | 48.7292% | 54.7220% | 52.8080% |
| WALNEY III | Offshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 50.1762% | 50.7716% | 56.2050% | 52.3843% |
| WEST BURTON | Coal | Actual | Actual | Actual | Actual | Actual | 32.7325% | 10.1071% | 11.8199% | 6.3690% | 10.3006% | 10.7425% |
| WEST BURTON B | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 59.3477% | 54.2878% | 63.2420% | 62.8067% | 53.4863% | 58.8141% |
| WEST OF DUDDON SANDS | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 48.7540% | 48.7691% | 55.4034% | 48.9209% | 50.7437% | 49.4779% |
| WESTERMOST ROUGH | Offshore_Wind | Actual | Actual | Actual | Actual | Actual | 54.8014% | 58.1061% | 63.4740% | 52.5501% | 56.1661% | 56.3579% |
| WHITELEE | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 31.8773% | 27.2893% | 29.6336% | 30.7296% | 31.3487% | 30.5706% |
| WHITELEE EXTENSION | Onshore_Wind | Actual | Actual | Actual | Actual | Actual | 26.7655% | 23.5253% | 25.1664% | 26.6647% | 28.4492% | 26.1989% |
| WHITESIDE HILL | Onshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 38.3704% | 55.0847% | 60.3399% | 51.2650% |
| WILTON | CCGT_CHP | Actual | Actual | Actual | Actual | Actual | 16.1379% | 14.4130% | 15.5750% | 21.4515% | 17.1525% | 16.2885% |
| WINDY STANDARD II | Onshore_Wind | Generic | Generic | Partial | Actual | Actual | 0.0000% | 0.0000% | 43.2981% | 49.4509% | 53.4476% | 48.7322% |

# 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 2021/22**

| Technology | Generic ALF |
|---|---|
| Biomass | 49.5396% |
| CCGT_CHP | 51.0635% |
| Coal | 20.3859% |
| Gas_Oil | 0.4602% |
| Hydro | 41.8887% |
| Nuclear | 75.8434% |
| Offshore_Wind | 49.4981% |
| Onshore_Wind | 36.0719% |
| Pumped_Storage | 9.7926% |
| Battery | 9.7926% |
| Tidal | 23.1000% |
| Wave | 2.9000% |
| Solar | 10.8000% |

*Note: As we presented at the Transmission Charging Methodology Forum (November 2020), due to lack of metered 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 2021/22'

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 2015/16 to 2019/20 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. TEC, STTEC and LDTEC are daily products so changes occur at midnight.

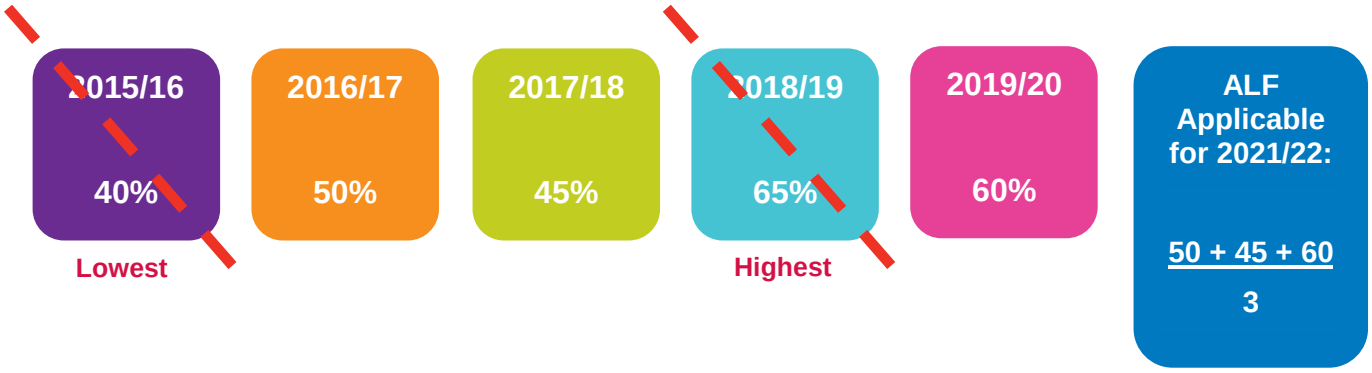
ALFs are calculated at station level, so where a station has multiple Balancing Mechanism Units (BMUs) representing generating units, station demand or trading site demand, the MO and FPN will be the aggregate of these.

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.

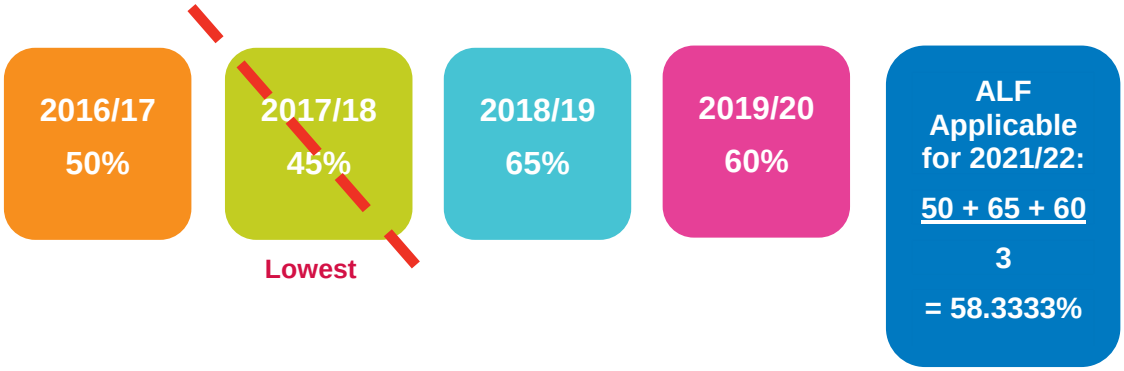
## Five years of data

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.



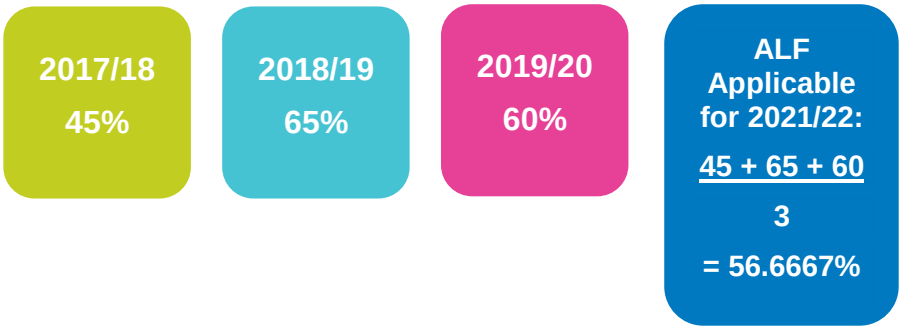

## Four years of data

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

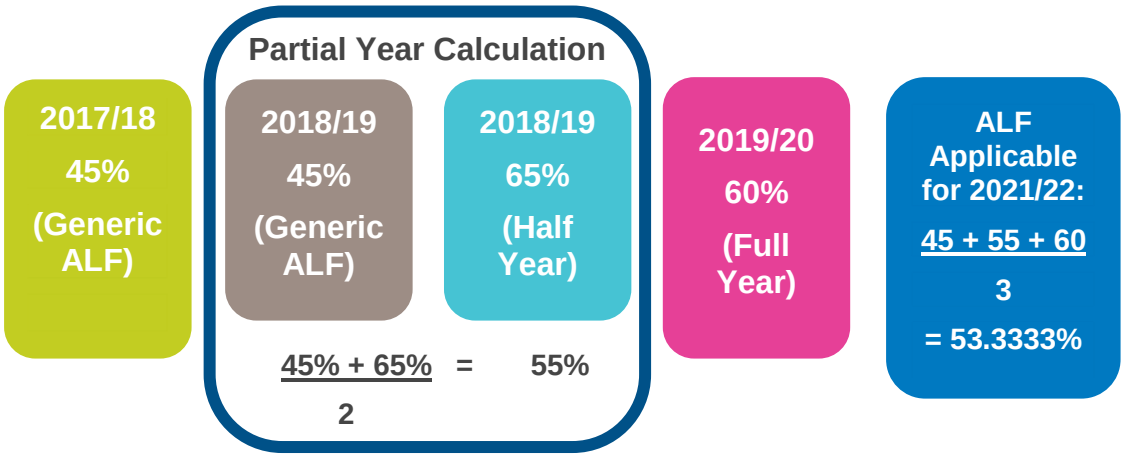
If your station has full ALF data over the past three years, then your ALF is the average of these three years. If you have three full years and one partial year, the partial year is ignored.




## 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.

A partial year would most likely occur when TEC is held for only part of the year. The station's output data is used from the day in the year that the station first begins to output onto the system.

## 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 Wednesday 23rd December. We will publish the final ALFs in January which will be used for TNUoS tariffs for 2021/22.

**TNUoS Revenue team**

**E** TNUoS.Queries@nationalgrid.com

**T** 01926 654633

# A

# Generation charging principles

# Generation charging principles

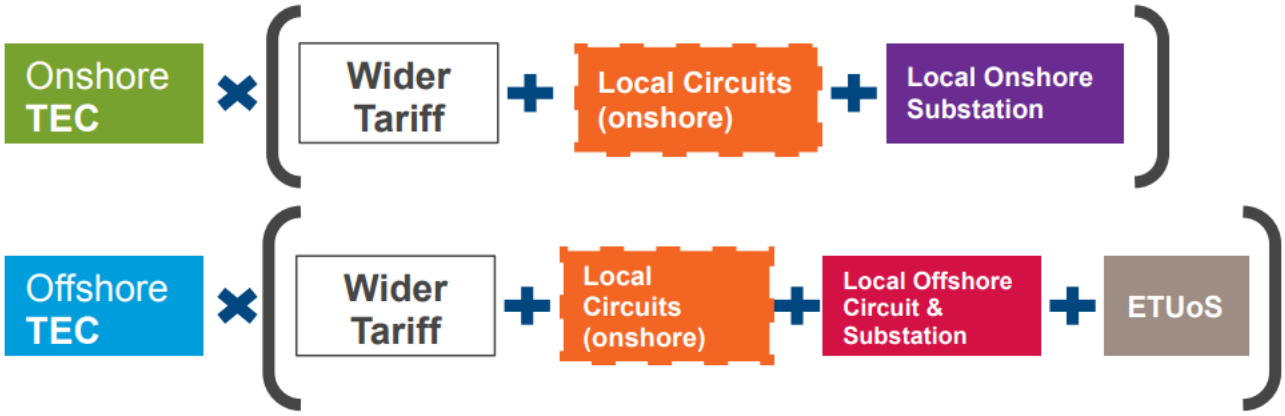
## Generation charging principles

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. It may also affect how the Annual Load Factor (ALF) is calculated for newly or recently commissioned generators
- **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

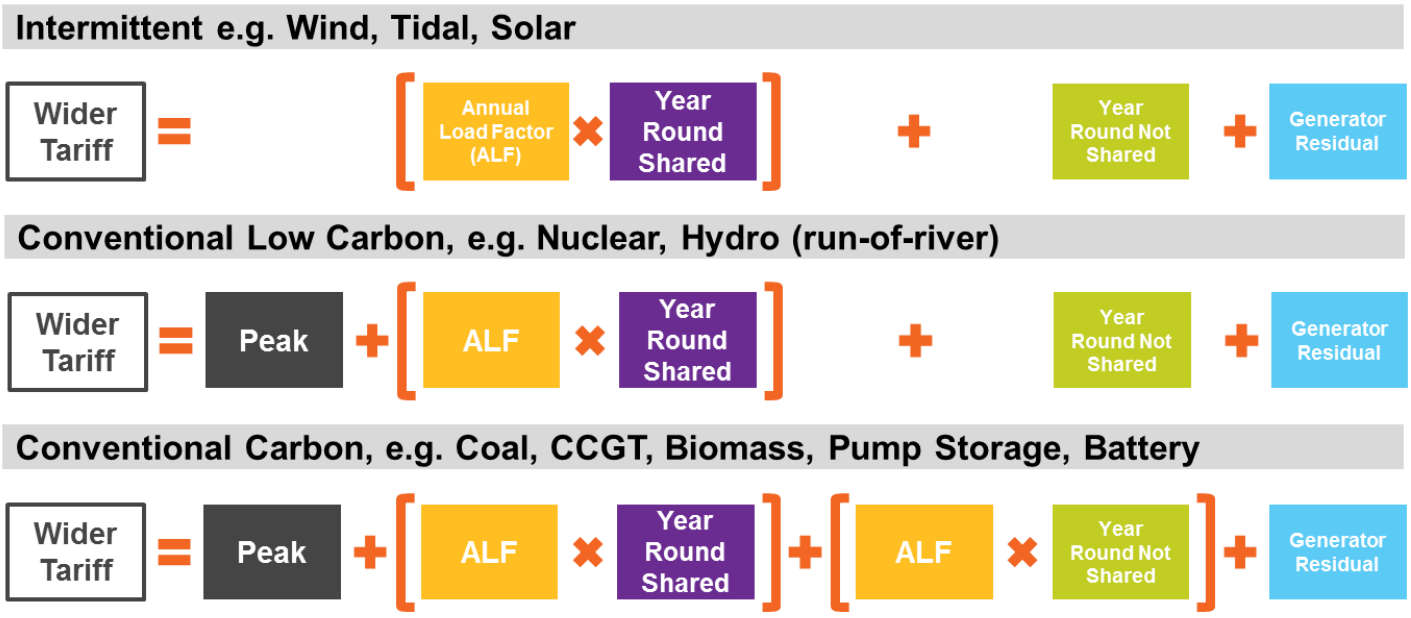
The wider tariff is made up of several parts to reflect the cost of different generator types connecting to the transmission system in different parts of the country.

There are four parts that make up the wider tariff: **The Peak**, **Year Round Shared**, **Year Round Not Shared**, and the **Residual**. 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 Residual 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**.*