

# Ballincurry Wind Farm



Presentation to  
Express Partner Meeting  
Kilkenny, November 2023

**EXPRESS**  
European regions  
promoting renewable  
energy self-sufficiency

# Before we start....

- Ballincurry is not a community wind farm.....
  - ...but it is a wind farm developed in a community
  - ... and we try to be a good neighbour.
- This is not a template for how a wind farm should be developed by a community .....it's simply a reflection of our experience in getting from greenfield to operational....
  - ... historically the process was the same for communities which is why we don't have community wind farms.

# Topics

- Overview
- Grid
- Planning
- Financing
- Construction
- Turbine Delivery
- Operation



# Project Overview

- 4.6 MW, 2 x E92 with tip height of 125m.
- Annual average windspeed of 8.2m/s.
- Capacity Factor is 40%+ exporting 17GWhs+
- Project started in 2009 (Grid Application)
- Project Operational in 2019 (Grid Connection)
- Distribution connected (10kV) – so our DLAF (should be) 1+
- Market Registration as non participating generator (deminimis NND).
- Market Quantities traded through it's own supply company in I-SEM.


# Grid

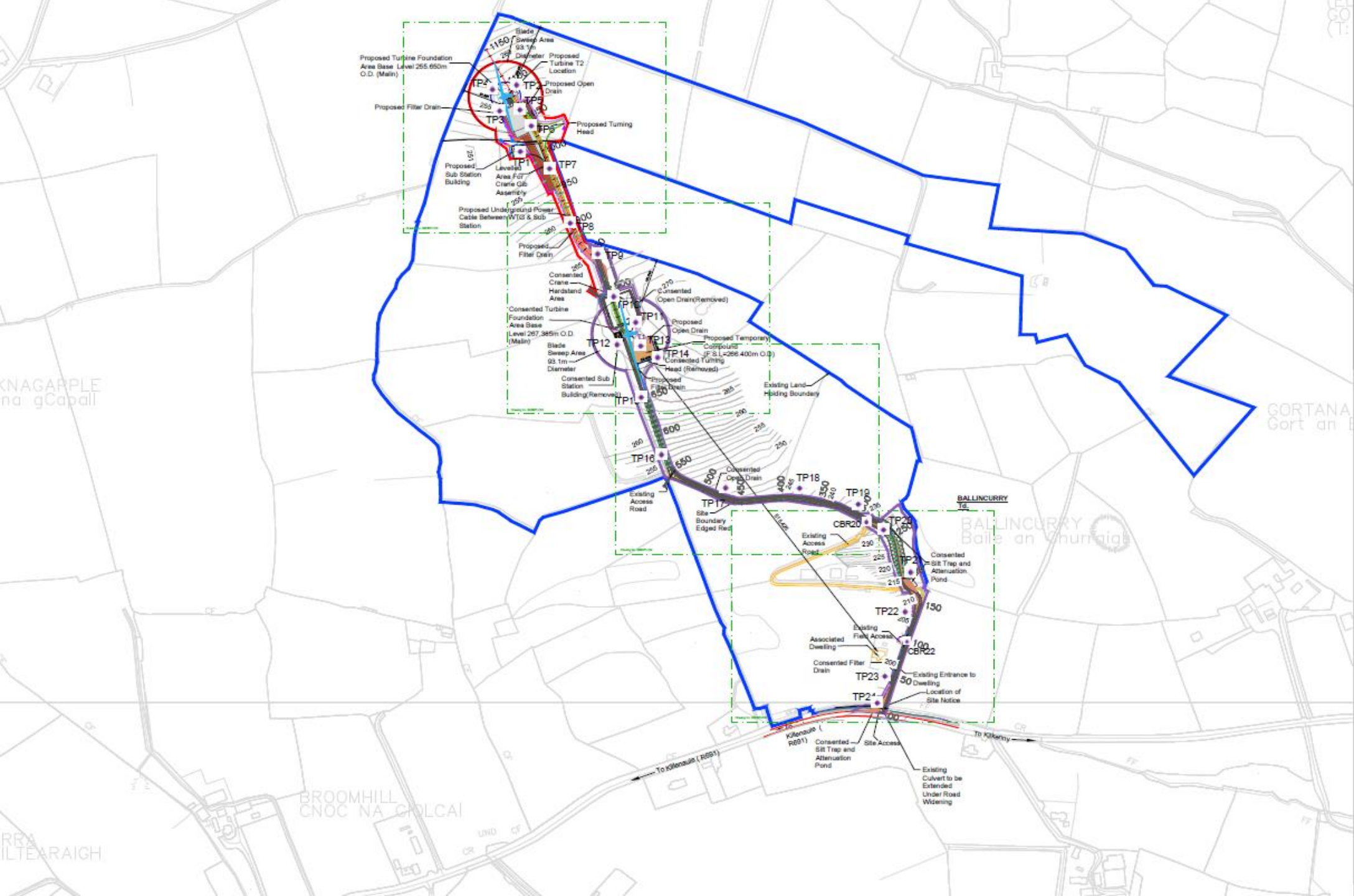
- Application for 4.6MW grid connection in GATE 3 (2009)
- Letter of Offer / Standard Connection Agreement (2012) – project trigger.
- Part of a subgroup
  - Two project connection to existing ESNB Glengoole 38kV substation (2 x 5MVA).
  - Upgrade of a 5MVA to a 10MVA transformer (+ new building in a live station).
  - We engaged in regular meetings with ESNB staff from late 2014.
  - Projects required to arrange the OHL/UGL routes with landowner payments and Section 5.
  - ESNB required to get planning approval for the substation upgrade and to build the lines (non-contested).
  - Timeline slippage but final agreed connection date of November 2018 (to be site ready).
- Turbines installed Nov 2018 - connected in May 2019.

# Planning

Area Zoned as preferred for wind energy  
Zoned as secondary amenity area



- T1 (Single Wind Turbine with Planning Envelop of 126m)  Lagerwey
  - Local Authority Application (July 2013)
  - Local Authority Refusal (April 2014) on grounds of Visual Amenity Impact
  - Appeal to ABP (May 2014)
  - ABP Approval (**Sept 2014**) 2:1 Majority (Contrary to Inspector's recommendation)
- T2 (Single Wind Turbine with Planning Envelop of 126m)
  - Local Authority Application (July 2015)
  - Local Authority Refusal (Nov 2015) on grounds of Visual Amenity Impact
  - Appeal to ABP (Dec 2015)
  - ABP Approval (**August 2016**) 2:1 Majority (Contrary to Inspector's recommendation)



- Site Notes**
- Land Owner Boundary
  - Proposed Site Boundary
  - Consented Site Boundary (Planning No. PL13/231)
  - Attenuation Pond and Buffering Outfall
  - Wind Farm Access Road
  - Turbine Hardstand
  - Sub Station Building
  - Proposed Open Interceptor Drain
  - Proposed Surface Water Filter Drain
  - Existing Stream
  - Culvert
  - Consented Attenuation Pond (Planning No. PL13/231)
  - Proposed Underground Power Cable
  - Permitted Development (Planning No. PL13/231)
  - Filtration Check Dams
  - Proposed Temporary Compound
  - Wind Turbine Sweep Area

|                                 |                             |
|---------------------------------|-----------------------------|
| <b>WIND TURBINE GENERATOR 1</b> |                             |
| TP1 Crane Pad:                  | E: 627624.000 N: 648774.000 |
|                                 | BASE LEVEL: 265.650m O.D.   |
| <b>WIND TURBINE GENERATOR 2</b> |                             |
| TP2 Crane Pad:                  | E: 627746.000 N: 648848.000 |
|                                 | BASE LEVEL: 265.650m O.D.   |
| <b>CONTROL BUILDING</b>         |                             |
| TP3 Crane Pad:                  | E: 627646.000 N: 648774.000 |
|                                 | R.P.L.: 255.000m O.D.       |

| rev | modifications | by | date |
|-----|---------------|----|------|
|     |               |    |      |
|     |               |    |      |

client  
Entrust

project  
Ballincurry 2 Wind Farm, South Tipperary

stage  
Planning

title  
Site Layout Masterplan

scale  
1 : 2500 @ A1

|          |       |         |           |
|----------|-------|---------|-----------|
| surveyed | drawn | checked | date      |
| CT       | CT    | A.O.G   | June 2015 |

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# Financing

- Initially - Director's Loan
- Mini EIS in 2014 & 2015 (private)
- Refit2 Letter of Offer issued Sept 2016 for 4.6MW
  - Signed PPA with own supply co. (Ballincurry Energy Supply Ltd)
- Raised EIS in 2016
  - Advertised publicly and oversubscribed (early closure).
  - Funds raised was in excess of €1M.
    - Offered 10c return per 1€ invested with min holding period over 4yrs.
    - No entry or exit fees, no broker fees, cost limited to advertising (Business Post).
- Project Finance with Triodos Bank NV
  - Financial Close (March 2018) with €7.5M of Non-Recourse Debt.

BALLINCURRY WIND FARM LIMITED



EMPLOYMENT INVESTMENT INCENTIVE SCHEME  
INFORMATION MEMORANDUM  
December 2016

**BEAUCHAMPS**

**Triodos Bank**



# Construction (March 2018 – ?!)

- Owner's Engineer

- JOD – Construction Contract



- Civils Contractor

- Design & Build (FIDIC Yellow) with L&M Keating
  - Roads (significant cut but 19% incline)
  - Substation & cable trenching (ESBN takeover issues)
  - Hardstands



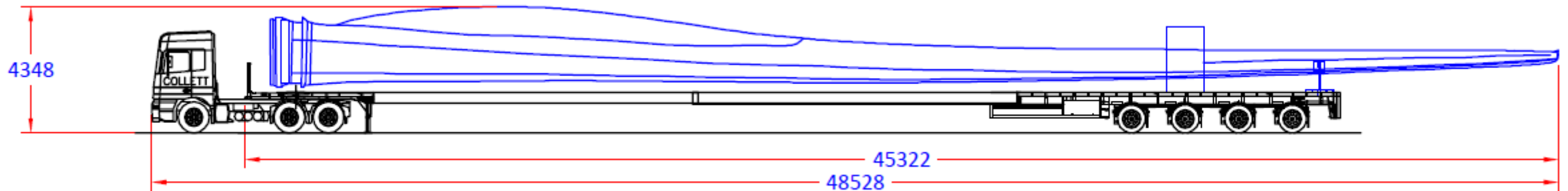
- Turbine Supply & Installation

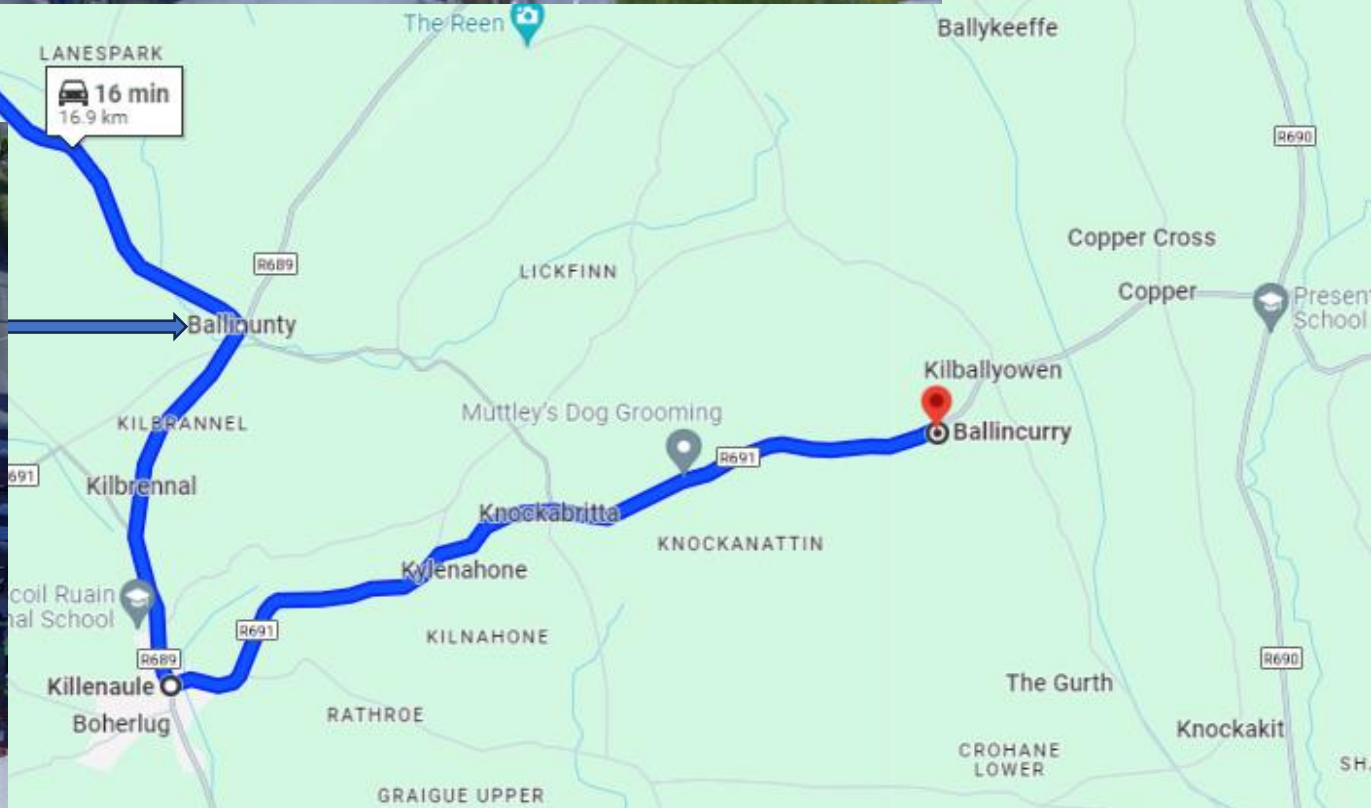
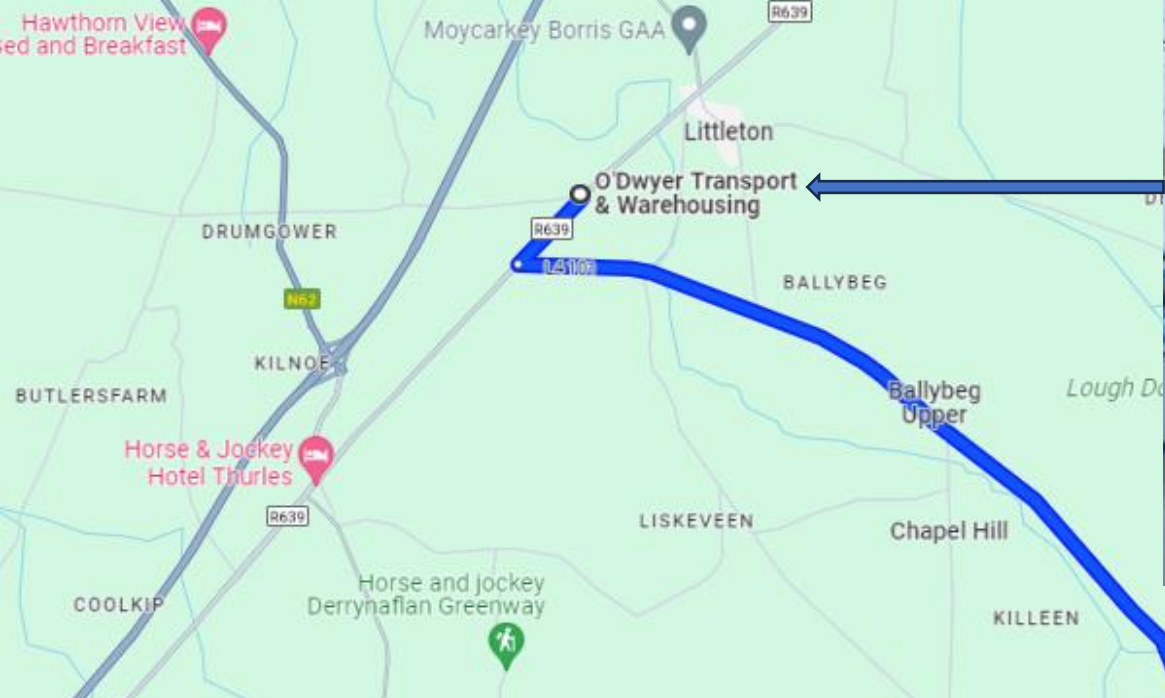
- Enercon + foundations + electrical BoP.



# Turbine Delivery Responsibilities

- Enercon E92
  - Towers, nacelles, generators to site.
  - Blades delivered to Transfer Area.
    - Project couldn't get land easements for oversized components.
- Project
  - Blades from Transfer Area to site – Google!





# Blade Lifter

- Shortlisted & interviewed a few suppliers.
- Selected Voser Transport AG (Switzerland).
- Arranged logistics through O'Neill Heavy Haulage.
- O'Neills arranged the Garda for traffic management.
- Temporary disconnection of overhead lines (ESBN + Eir) for each run.
  - Timing critical to reduce inconvenience (power and commerce).





Additional towing to get up the 19% incline



Turbine?





20

**ENERCON**  
ENERGY FOR THE WORLD





- Turbine Components delivered to site
- Erected over 4 week period
- Enersol – Substation fitout (Enercon)
- Ready to go Nov 2018



# Operations

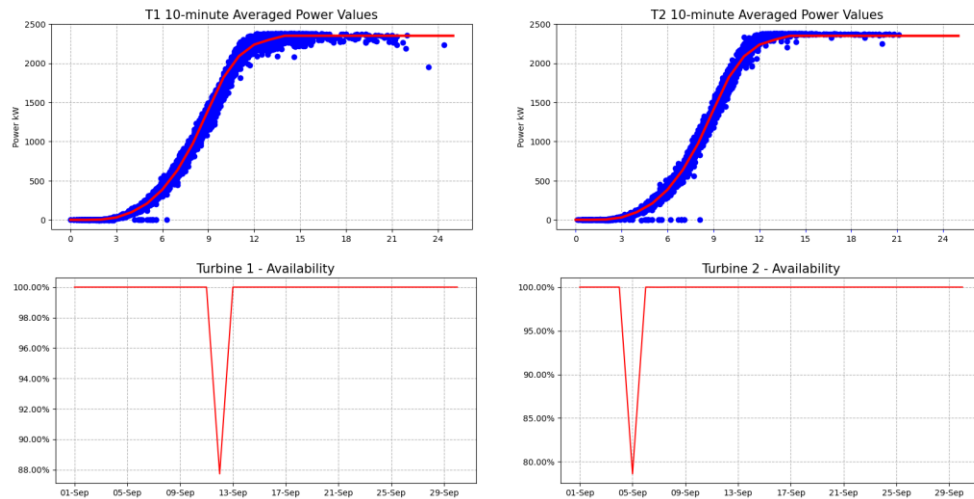
- Ballincurry Wind Farm Ltd.
  - Grid Connected in May 30<sup>th</sup> 2019.
  - 2 turbines fully commissioned by 21<sup>st</sup> June and exporting!
  - Project has 15yr EPK with Enercon.
  - Asset Management Agreement (RCL)
- Ballincurry Energy Supply Ltd.
  - Registered as a Direct Clearing Participant with ECC.
  - Supply Co. went live in EPEX SPOT on 27<sup>th</sup> Feb 2019 and was trading (assetlessly) prior to generation.
  - Supplier Lite Services Agreement (RCL)

### Monthly Wind Farm Key Performance Values

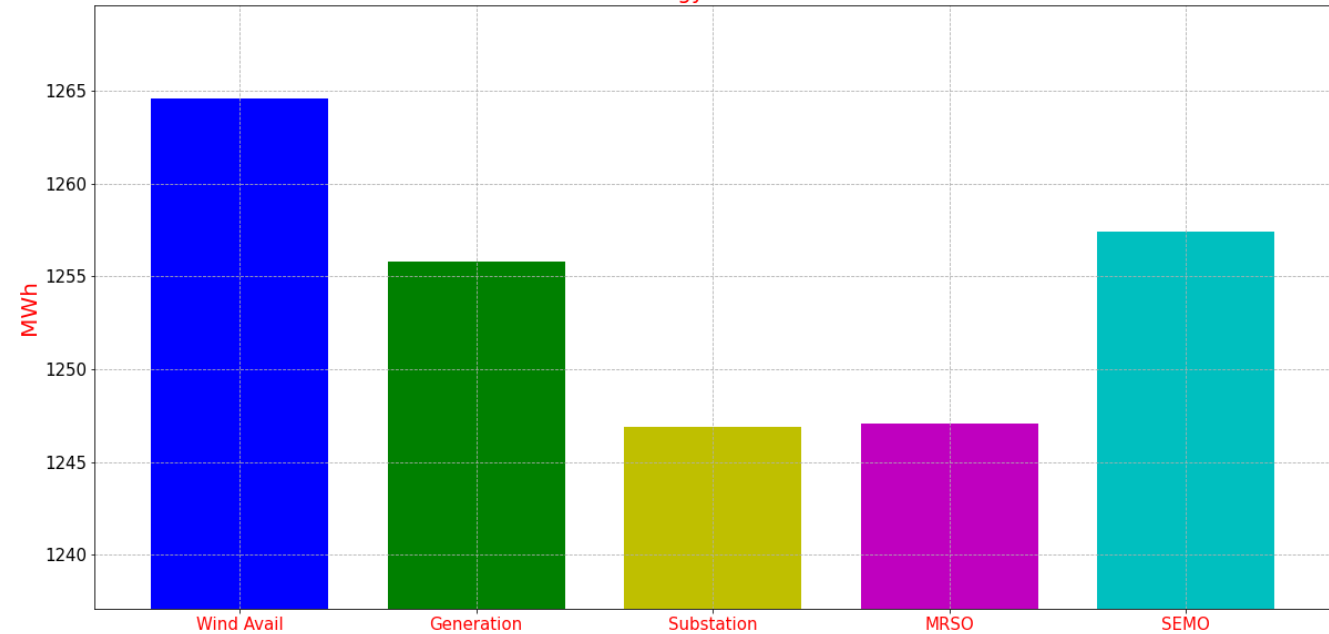
| PARAMETER                      | VALUE      |
|--------------------------------|------------|
| Farm Availability              | 99.4%      |
| Capacity Factor                | 37.2%      |
| Power Average                  | 872 kW     |
| Mean Windspeed                 | 7.2 m/s    |
| Max (10min) Windspeed          | 24.4 m/s   |
| Wind Available Generation.     | 1264.6 MWh |
| Energy Generation (ex-Turbine) | 1255.8 MWh |
| Wind Loss                      | 0.5%       |
| Energy Metered (ex-Substation) | 1246.9 MWh |
| On-Site Electrical Losses      | 0.7%       |
| ESB Meter Value (ex-MRSO)      | 1247.1 MWh |
| ESB Meter Losses               | -0.01%     |
| SEMO Metered Quantity          | 1257.4 MWh |
| DLAF Uplift                    | 0.8%       |

### Turbine Specific Key Performance Values

| PARAMETER                 | T1    | T2    |
|---------------------------|-------|-------|
| Availability              | 99.6% | 99.3% |
| Capacity Factor           | 39.0% | 35.3% |
| Power Average kW          | 915.0 | 829.1 |
| Mean Windspeed m/s        | 7.4   | 7.0   |
| Max (10min) Windspeed m/s | 24.4  | 21.1  |
| Energy Production MWh     | 660.0 | 597.9 |
| Wind Avail. Prod. MWh     | 666.4 | 602.1 |
| Tech Avail. Prod. MWh     | 662.8 | 601.9 |
| Wind Loss                 | 0.4%  | 0.7%  |



### Metered Energy values for Month



# Trading in I-SEM



CLEARING

