Contact Us

We welcome conversation, engagement and interaction with you on any aspect of how we propose to progress the Dyrick Hill wind farm project and particularly on how we communicate project information to you. If you would like to chat about this proposed project further please contact us via any of the below means.

Website : www.dyrickhillwindfarm.ie
Email : dyrickhill@emp.group
Phone : 01 588 0178
Write : EMPower, 2 Dublin Landings, North Wall Quay, North Dock, Dublin 1

Project Webinar:

The project team will host the second Dyrick Hill project specific design webinar on **Thursday evening the 21st of July 2022 between 7pm and 8pm**. You can register for the event at **www.dyrickhillwindfarm.ie/webinar.**

The project design team will also facilitate an in-person project information evening in the **Dungarvan Park Hotel** on the **11/08/2022** between **4.00pm and 8.00pm**

All project engagement events will be advertised in local newspapers, project newsletters and on the project website. Members of the project design team are available, at the contact details listed on this page, to talk through any aspect of the Dyrick Hill wind farm design process which you would like to discuss further.

Proposed Dyrick Hill Wind Farm Project

Project Newsletter No. 3 – July 2022

Looking northeast towards the potential project's Study Area from the townland boundary of Farnane Upper and Lyrattin

Introduction

We started our community engagement process for the proposed Dyrick Hill wind farm project in December 2021 by sharing initial project proposals via newsletter with those who live closest to the project's Study Area. A second project newsletter and a project design webinar outlining early-stage project design criteria followed in March and April 2022.

Our community engagement and project scoping approach has highlighted different opinions and generated conversation and dialogue which has informed this third project newsletter and the overall project design process. This project design approach is designed to ensure that accurate project information is circulated and that any interested stakeholders can address queries with the project team during the project design process.
All the community project material shared to date, including design webinar recordings, are available for viewing from the dedicated project website www.dyrickhillwindfarm.ie

The second Dyrick Hill wind farm project design webinar is scheduled for the 21/07/22 between 7pm and 8pm. Registration for this webinar is available at www.dyrickhillwindfarm.ie/webinar.
The project team will also facilitate a project information event in the Dungarvan Park Hotel on the 11/08/2022 where you can drop in anytime between 4.00pm and 8.00pm to discuss the proposed Dyrick Hill wind farm project with members of the design team and view the most up to date project information.

How A Wind Farm Project Proposal Is Formulated

Wind farm design is governed by a series of legislative guidelines around set back distances, noise, visual and environmental constraints amongst other considerations. Any proposed project which does not carry out a design that adheres to this legislation is unlikely to be granted a planning permission by the consenting authority.

The proposed Dyrick Hill wind farm project is being designed with the most up to date iteration of the guidelines for wind energy development in mind. This best in class, conservative approach seeks to future proof the proposed project against any new guidelines which may issue and ensures that the most suitable project design is selected and put forward for consideration in the form a planning submission.

The project's constraints mapping is continuously updated throughout the development's design phases, based on the findings of the Study Area assessments as they are completed. We are currently at the Design Iteration 1 stage. There will be further Design Iterations as the project assessments evolve.
Some of the areas of this project's design process where we have had the most conversations with interested stakeholders and residents local to the proposed project's Study Area are discussed in this Newsletter.

Who Are EMPower?

EMPower is an Irish renewable energy developer with over 700 MW in development in Europe and Africa. Our senior management team comprises five Irish professionals with a combined 95 years' experience delivering projects from conception to operation across five continents. EMPower's headquarters is in Dublin.

EMPower is owned by GGE Ireland Limited, Wind Power Invest A/S and EMP Holdings Limited.

Our vision is to provide low carbon, ecologically non-invasive, affordable energy to facilitate Ireland's expanding economy and sustainable energy targets.

95 Years

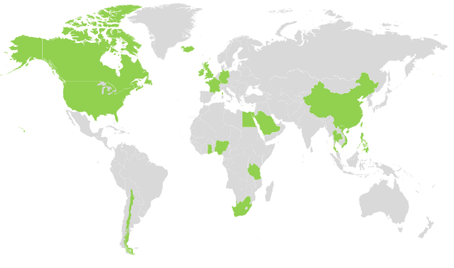
Combined Experience of EMPower Management Team in Renewable Energy

700 MW+

Wind Energy Capacity Currently Under Development By EMPower

5 Continents

Combined Geographical Renewable Energy Experience of EMPower Team



Our Commitment

Our commitment is to engage meaningfully with our stakeholders on decisions that concern them. We aim to do this in a timely manner, and we commit to building relationships and starting a conversation on what aspects of this proposed renewable energy project could work best for this local area. We feel that designing any proposed project in this manner makes better social and business sense.

Wind Energy Frequently Asked Questions

How efficient is wind energy?

Wind captures and turns almost all the input energy from wind into electrical energy. The SEAI states that "electricity generated from wind and hydro is 100 per cent efficient".[8]
In 2018, 42.3% of fossil fuel energy was lost in transforming that fuel into electricity.[9]
Wind turbines produce electricity approximately 85% of the time. The other 15% of the time they are not turning for reasons, such as: very low wind speeds (under 10km/h), very high wind speeds (over 90km/h), and/or maintenance/repair work. After approximately one year of operation, it is estimated a wind turbine will have produced as much energy as it has consumed constructing it. (Source: ESB)

The output of a wind turbine depends on the turbine's size and the wind's speed through the rotor. A wind turbine with a net capacity factor of 35% and a capacity of 4.2 MW can produce more than 12,800 MWh in a year – enough to supply approximately 3,000 average Irish households. (Source: Eirgrid)

Do wind farms effect house prices?

For most of us, the purchase of our family home is the single largest financial investment we will make in our lives. It is completely justifiable that property owners, on hearing any proposals for development in their community, would be curious about the effect this might have on the resale value of their home. However, there is no peer reviewed evidence that a correctly developed and constructed wind farm will lower property prices or that they impact on property prices in Ireland. A great deal of research, in many different countries including the UK, Germany, Australia and the USA, over the last 20 years examining house prices in communities close to wind farms have varying conclusions. The majority of research aligns with detailed studies by The Centre for Economics and Business Research (CEBR), The Institute of Chartered Surveyors, The House of Commons Library and Renewable UK where conclusions that wind farms have little or no impact on property values are reached.

What is a wind turbine's lifetime emissions?

Wind energy emits no toxic substances like smog-creating nitrogen oxides, acid rain-forming sulphur dioxide and particulate deposits.
A 2014 study by the Intergovernmental Panel on Climate Change found onshore wind energy to have the lowest mean lifecycle emissions of all viable sources, such as solar, nuclear energy and natural gas, at just 11 grams CO2(e) per kWh.

Are wind turbines linked to health issues?

EMPower are committed to ensuring that we design, develop, construct and operate our projects to the highest possible health and safety standards. In 2018 the World Health Organisation (WHO) assessed the environmental noise guidelines for a range of noise sources including traffic, noise, aircraft, railways, leisure activities and wind turbines. The WHO findings align with the view of the Irish Department of Health which states that, *"There is no reliable of consistent evidence that wind farms directly cause adverse health effects in humans"*[10]. The Irish Department of Health based these findings on research carried out by the Australian National Health and Medical Research Council. The balance of scientific evidence and human experience to date has concluded that wind turbines are not harmful to human health – in fact, wind energy reduces harmful air emissions and creates no harmful waste products when compared with other sources of electricity production. However, EMPower are conscious that the potential exists for someone who does not like wind turbines or renewable energy to become frustrated or annoyed with a wind energy project proposal. Please contact us if you would like to discuss this topic further.

Do wind farms make noise?

It is the duty of EMPower to demonstrate, during the planning process, that noise levels of our proposed project will not adversely affect local residents. The studies completed during this period will be used to design the Dyrick Hill project so noise levels at nearby residential homes do not exceed national planning guidelines. Currently in Ireland and the United Kingdom, guidelines in relation to wind turbine noise levels are set between: "35 and 45 decibels dependent on the time of day and the level of background noise", in line with international best practices. Current guidelines cite a minimum distance of 500m between residential dwellings and Wind Turbines. EMPower are designing the proposed Letterkeeghaun project to be a minimum of 750m from residential dwellings.

Did you know:

The projects noise consultant must discount the noise emitted by existing wind turbines in the area in order to establish a true background noise level. Wind Farms are limited in the amount of noise they can emit above this lower background level

If you would like to discuss any of the sample questions listed here or any other aspect of the design of the proposed Dyrick Hill project, please contact us on any of the below mediums.

[8] https://www.seai.ie/data-and-insights/seai-statistics/key-statistics/electricity/
[9] https://www.seai.ie/publications/Energy-in-Ireland-2019-.pdf
[10] https://www.oireachtas.ie/en/debates/question/2015-03-25/section/213/

Why Onshore Wind

Onshore wind energy makes sense for Ireland for many reasons. It's a clean fuel source which does not pollute the air like power plants that rely on combustion of fossil fuels, such as coal or natural gas. Unlike conventional power plants, wind turbines don't produce atmospheric emissions that cause greenhouse gasses when generating electricity and is a free domestic natural resource, produced in abundance in Ireland. As an operating wind farm occupies such a relatively small proportion of an overall site area, approximately a 3% footprint, many other land uses can co-exist such as farming, recreation, commercial forestry, and biodiversity management.

Climate change refers to the change in climate that is attributable to human activity arising from the release of greenhouse gases in particular from the burning of fossil fuels (coal, oil, peat) for transport, electricity generation and agriculture.
The Government declared in May 2019 that Ireland was in the midst of a climate and biodiversity emergency. The Environmental Protection Agency (EPA) has stated that mean annual temperatures in Ireland have risen by 0.7° Celsius (C) over the past century and are likely to rise by 1.4°C to 1.8°C by the 2050's and by more than 2°C by the end of the century due to climate change.

EMPower can aid in the delivery of the Government's Climate Action Plan (June 2019) where a target of 70% of Ireland's electricity from renewable sources by 2030 was targeted. The Irish Government has recently increased this target to 80%. A firm commitment from the Irish Government on Climate Action is forming part of climate change legislation currently being publicised by our policy makers;

- Halving our greenhouse gas emissions by 2030 and reaching net zero by 2050 at the latest
- Increase renewable electricity – up to 80% by 2030
- Provision for 5 year carbon budgets, consistent with emissions reduction pathway 2050.

Wind energy is currently the largest contributing resource of renewable energy in Ireland. It is both Ireland's largest and cheapest renewable electricity resource. At present the Republic of Ireland has over 300 operational onshore wind farms[3] with a combined capacity of c.4,300MW and over 2,500 individual wind turbines. This represents an investment of over €7 billion, regularly powering 65% of Ireland's electricity needs. The wind energy industry also supports 5,000 jobs and annually pays more than €45 million in commercial rates to local authorities[4].
Ireland is a country with enormous renewable energy resources and are world leaders at incorporating onshore wind into the national grid. Renewable energy provided 42% of Ireland's electricity in 2020, with over 86% of this coming from wind energy[5]. This is the highest share of electricity being provided by onshore wind in Europe[6]. In 2018 wind energy avoided 3.1 million tonnes of CO2 and cut €432 million off our fuel import bill[7] demonstrating the huge contribution that onshore wind is making to climate action. This accounts for the second largest source of electricity generation in Ireland after natural gas. Ireland remains one of the leading countries in the deployment of wind energy and third place worldwide in 2018, after Denmark and Uruguay.

3 – Based on EirGrid generation reference numbers
4 - Economic impact of onshore wind in Ireland - KPMG April 2021
5 - https://www.seai.ie/data-and-insights/seai-statistics/key-publications/energy-in-ireland/
6 - http://www.eirgridgroup.com/newsroom/electricity-consumption-f/index.xml
7 - https://www.seai.ie/publications/Energy-in-Ireland-2019-.pdf

Project Design Iteration One

The proposed Dyrick Hill wind farm project's design initially established a "Buildable Area" as discussed in previous project Newsletters and Design Webinar. From this feasible "Buildable Area" an initial turbine layout is now being progressed to form Design Iteration One. We anticipate there will be further refinement of this design following further Study Area assessments and constraints analysis. This continuous iterative design process will inform the final locations of all proposed project infrastructure and ensures the most suitable renewable energy project proposal for the surrounding environment and locality is achieved.

You will find the Design Iteration One Map illustrated on pages six and seven of this Newsletter. Over the coming months the design will be re-assessed and re-worked before reaching a final project proposal. The final project design will then be submitted to the consenting authority for consideration in the form of a planning application.

Proposed Grid Connection Routes

There are several grid connection routes currently being considered for the proposed Dyrick Hill project in order to find the most feasible option. Along with the Woodhouse, Dungarvan, Ballydine substations the wider area is relatively well served by grid infrastructure which includes the: –

- 220kV Dungarvan/Cullenagh over head line;
- 110kV Woodhouse/Dungarvan over head line;
- 110kV Cahir/Cullenagh over head line.

Dungarvan substation is approx. 15km to the southeast of the project Study Area and provides a potentially suitable connection point to the national grid. The project Design Team are currently assessing a number of underground cable routes in order to ascertain the most feasible grid connection solution. See figure 1 for two routes to Dungarvan Substation currently being assessed. Consultation with Eirgrid and ESB will also dictate the eventual connection point chosen for this proposed project.

Figure 1

Turbine Delivery Route

Waterford port provides the most likely port of entry in order to deliver turbine components to this proposed project. From Waterford Port the most likely route would be along the N29 travelling north west. Turbine components would then turn left and join the westbound N25 and then turn right onto the N72 and continue west to Ballymacmague, just north of Dungarvan. From this point there are two conceivable routes to travel to the projects Study Area, see figure 2.

- Option A, shown in green in figure 1, travels north from Ballymacmague on the R672 and then left onto the L5071 before entering the projects Study Area from the south.
- Option B, shown in blue in figure 1, travels west from Ballymacmague on the N72 before turning north onto the L1027 and enters the projects Study Area from the North.

Assessments are continuing to ascertain the most feasible turbine component delivery route solution for the proposed project.

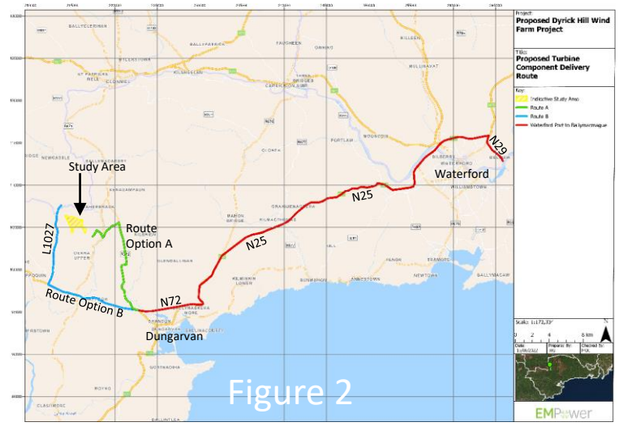


Figure 2

Noise And Vibration

Noise is generated by wind turbines as they rotate to generate power. This only occurs above the 'cut-in' wind speed and below the 'cut-out' wind speed. Below the cut-in wind speed there is insufficient strength in the wind to rotate the blades and above the 'cut-out' wind speed the turbine is automatically shut down to prevent any malfunctions from occurring.
The 'cut-in' wind speed at the turbine hub-height is approximately 3 meters per second (11 kilometres per hour) and the 'cut-out' wind speed is approximately 25 meters per second (90 kilometres per hour).

The principal sources of wind turbine noise are from the blades rotating in the air (aerodynamic noise) and from internal machinery, normally the gearbox and, to a lesser extent, the generator (mechanical noise). The blades are carefully designed with a view to minimising noise whilst optimising power transfer from the wind.

If this project is consented noise and vibration can also be generated by construction activities such as rock breaking and passing heavy goods vehicles. Construction noise will occur during excavation and earth moving, laying of roads and hard standings, transportation of materials and erection of the wind turbines. The construction phase will be phased and temporary. A full project life cycle noise and vibration project assessment will be included as part of the Environmental Impact Assessment Report and included with the project's planning submission.

Noise and vibration assessments are undertaken for the operational phase, the construction phase and the decommissioning phase of the proposed development.

Baseline noise monitoring is undertaken at different receptor locations surrounding the proposed projects Study Area to establish the existing background noise levels in the vicinity of the proposed development.

The measurement locations chosen represent some of the closest locations and dwellings to the proposed project as well as representing different noise environments in the vicinity of the Study Area.


Photograph of typical Sound Level Meter

To inform the noise impact assessment for the proposed project, baseline noise monitoring of the existing noise environment is carried out over an extended period in the vicinity of the project's Study Area. This process establishes the existing noise levels prior to any potential development. Appropriate noise level limits for any future project are then determined in line with the latest Government policy and guidance.

The noise limits seek to strike a balance between the noise restrictions placed on a wind farm, the protection of local amenity and the national and global benefits of renewable energy development. The predicted noise emissions from the proposed wind farm are then compared against these limits. The wind farm will be designed and operated in a manner that ensures the prescribed limits won't be exceeded and will also be further validated with post construction noise monitoring surveys if the project is consented.

Land Soils And Geology

The Study Area's land use consists predominantly of dairy cattle and sheep grazing with a combination of improved grassland pastures on the lower elevations and commercial forestry and mountain heath in more elevated areas of the Study Area. Detailed investigations including site walkovers, peat stability assessments, trial pit excavations and bore holes will be undertaken to access the geology of the Study Area in detail. The initial non intrusive analysis found the Study Area to consists of soils and subsoils made up of shallow bedrock with minor peat and glacial till pockets. The geology is predominantly upper Devonian age sandstone and mudstone.

If this project is consented, construction of the wind farm infrastructure will require the removal of subsoils and possibly rock to create solid foundations. Excavation of any bedrock and suitable off-site aggregate sources will provide appropriate construction material for access roads, turbine bases and general hard-standing foundations. Removal and reuse of subsoils and bedrock does not represent a significant impact on the geology of the Study Area. At this stage of assessment there are no significant impacts or cumulative impacts on the soil and geological environment anticipated as a result of the proposed wind farm construction.

Proposed Project Schedule

Proposed Dyrick Hill Schedule	2020				2021				2022				2023				2024				2025				2026				2027			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Ornithology Studies																																
Planning Consultant (EIAR)																																
Stakeholder Consultation																																
Wind Measurement (Met Mast)																																
Planning Submission & Consideration																																
Grid Connection Application																																
Detailed Project Design																																
Project Construction																																
Project Operational																																

Note: Q1, Q2, Q3 and Q4 in the above schedule represent yearly quarters. For example, Q1 represent the first quarter of that year

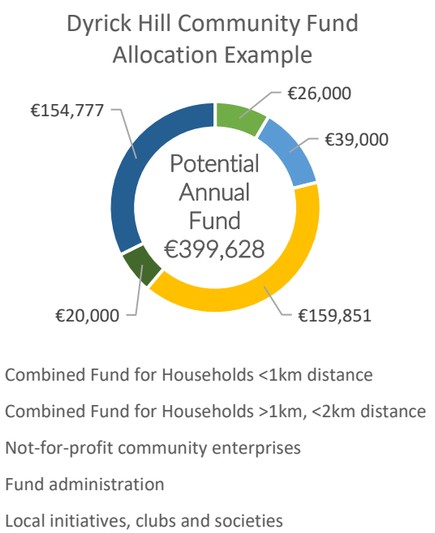
Community Benefit

At this, the Design Iteration 1 phase, the Dyrick Hill project contains 13 individual wind turbines and represents a combined electricity generating capacity of 80.6 Mega Watts. The proposed project would require an investment of over €90 million and would provide sustainable, low carbon energy generation infrastructure to meet Ireland's growing demand. The development benefits to the local community which could be realised include significant investment in local infrastructure and electrical systems, local job creation, and a contribution of approximately €22.5 million[2] in Waterford City & County Council rates over the project's lifetime. The Dyrick Hill project would also produce enough renewable electricity to power over 41,900 average Irish homes (SEAI 2018)

A community fund calculated in accordance with the Renewable Electricity Support Scheme (RESS) Terms and Conditions, €2 per Mega Watt hour of electricity produced by the project, would also be put in place. This would be made available to the local community for the duration of the RESS (15 years). The average capacity factor of wind energy projects in Ireland is 28.3% (SEAI, 2019). Assuming this efficiency, and an estimated project capacity of 80.6 Mega Watts, a community benefit fund would amount to an average of €399,628 per annum. The actual fund will vary around this average from year to year, depending on each year's wind conditions. Initial wind measurements at the Study Area suggest that the proposed Dyrick Hill project could be capable of achieving an above average capacity factor, and therefore a larger community fund.

"EMPower strongly believe that the local communities in which we propose our projects should benefit most from any associated project community fund"

The project's potential fund could be divided as per the illustration below. An annual minimum payment of €1,000 could be provided to each household within 1 kilometer of any proposed Dyrick Hill wind turbine. An annual minimum payment of €500 could be provided to each household located between 1 kilometer and 2 kilometers of any final turbine position. 40% of the fund, amounting to approximately €159,851 per year would be allocated to not-for-profit community enterprises, with an emphasis on low-carbon initiatives. The remainder of the fund would be directed towards local clubs, societies, admin and other initiatives. We welcome any suggestions from the community on how a community fund could best be allocated or ideas for suitable local projects that could be supported under this initiative.



€ 90 million
Investment in Irish infrastructure

€ 5.99 million[1]
Total Community Fund Contribution

€ 22.5 million[2]
Project Lifetime Approximate Contribution In County Council Rates

1 – Example for 13 Turbine project with a capacity factor of 80.6 MW
2 – Estimated €8,000 per mega watt installed for 35 year project lifespan

Population And Human Health

The ongoing assessments examine the potential impacts of this proposed project (both beneficial and adverse) and also any potential wellbeing and nuisance effects which could be experienced by the local and regional community. The results of this assessment will be documented as part of the Environmental Impact Assessment Report which will accompany the planning submission. The key issues examined from a population and human health perspective include:

- Population Trends;
- Socio-Economics, Employment and Economic Activity;
- Existing land Use;
- Recreation, Amenity and Tourism;
- Human Health and Safety;
- Dust emissions from construction activities;
- Noise emissions during construction and operation;
- Public safety;
- Visual impacts during operation;
- Shadow flicker during operation;
- Traffic nuisance during construction;
- Tourism and recreational impacts.

Looking west at a section of the potential project Study Area from the Touraneena area

Biodiversity

In addition to desktop studies and assessments carried out as part of the project's Environmental Impact Assessment Report, extensive field surveys are currently being carried out. These surveys catalogue the different habitats, mammals, bats, birds as well as aquatic ecology throughout the project's Study Area and associated proposed grid connection and turbine delivery routes. The potential for adverse effects upon the local flora and fauna in these areas will be ascertained via these surveys and will also be documented in the final Environmental Impact Assessment Report.

The projects Study Area is not located within any European Designated Sites. Some of the more sensitive Habitats located within 15 kilometres of the project's Study Area are the Blackwater River Special Area of Conservation, The Lower River Suir Special Area of Conservation, The Nier Valley Woodlands Special Area of Conservation, The Glendine Wood Special Area of Conservation and The Glenboy Wood National Heritage Area.

Bird species found in the wider environs of the project's Study Area are typical of agricultural grassland, upland heath and conifer plantation including species like Snipe, Golden Plover, Sparrowhawk, Hen Harrier, Black Gull and Kestrel.

Looking south west at the Dyrick Hill project Study Area from Curradoon

Hydrology And Hydrogeology

The Dyrick Hill wind farm Study Area is divided into 2 surface water subcatchment areas. These are the Finisk and Blackwater catchment zones. The Finisk River rises about 7km north east of the Project's Study Area and flows to the southeast. The Finisk River is joined by four smaller streams which rise within the project's Study Area, these are the Corradoon, Farnane, Lisleagh and Lickoran.
The proposed project is not situated within any environmentally designated areas nor within any groundwater source protection area.

Drainage management will be employed to control drainage water during any proposed future construction, ensuring that surface runoff from any developed areas of the proposed project will continue to be of good quality with no flood risk to the downgradient setting.

A surface water monitoring programme will be put in place during the construction phase if this project is granted a consent. Based on the proposed mitigation measures, there is no potential for significant impacts on the hydrology and groundwater pathways as a result of the proposed Dyrick Hill wind farm project.

214000
215000
216000
217000
107000
106000
105000
104000

Project:
Proposed Dyrick Hill Wind Farm Project

Title:
Proposed Project Layout (Design Iteration 1)

Key:
- Indicative Study Area
- Indicative Turbine Location

Scale: 1:12,500
N
0 0.15 0.3 0.6 km

Date:	Prepared By:	Checked By:
13/06/2022	RG	MOC

EMPower