

# FIXED ELECTRICAL GROUND POWER



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## WHO AM I?

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Electrical Engineer

daa AMD

Airfield + Engineering Dept.



# FIXED ELECTRICAL GROUND POWER

## WHAT IS IT?

Fixed Electrical Ground Power  
(FEGP)

*“A method of providing 400Hz power to an aircraft while on stand”*

**Fundamentally...**  
Car Charging for Jets



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## TRADITIONAL METHODS

### Aircraft Auxiliary Power Unit

*“An APU is a small jet engine in the tail of an aircraft that provides energy for functions other than propulsion.”*

**Fundamentally...**

Keeps the lights on



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## TRADITIONAL METHODS

### Diesel Ground Power Unit

*“A Mobile Diesel Generator used to energise an aircraft whilst on stand”*

### Fundamentally...

Keeps the lights on when aircraft is parked





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## MODERN METHODS

### Fixed Electrical Ground Power

*“Changes standard 230V 50Hz AC to the 115V 400Hz AC used by an aircraft”*

### Fundamentally...

Cleaner way of keeping the lights on when aircraft is parked



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## INSTALLATIONS

### Pier 3

*“Converter mounted under cabin of the Airbridge, converter interlocked with Airbridge for increased safety”*

### Fundamentally...

Airbridge brings converter right to the aircraft



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## INSTALLATIONS

### Pier 1

*“Converter mounted remotely with a pit and duct system delivering power to the tug box”*

### Fundamentally...

Power position aligned with aircraft receptacle





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## MAIN BENEFITS

- Equipment Life Costs
- Asset Management
- Sustainability



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# Equipment Life Costs

*“Through the electricity charges applied to the airlines we are able to recoup costs for maintenance, operation and replacement of equipment”*

# Fundamentally...

€€€€€€€€€€€€€€€€€€€€€€€€€€€€€€€€€€



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## Asset Management

- Energy Monitoring
- Asset Monitoring
- Stand Safety



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## Energy Monitoring

Active Energy + Ignition

*“Dual System combining pure Energy Consumption for our Energy Monitoring team and on-block off-block times for our Billing Dept”*

**Fundamentally...**

Stand + Time = Actual Aircraft Consumption (€€€€€ again)



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## Asset Monitoring

O/S Indication + Ignition

*“Local asset status indication and daa IT+T built a bespoke ignition platform to monitor all FEGP equipment”*

**Fundamentally...**

**More Monitoring > Downtime**



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## Stand Safety

*“Removal of Assets from stands + We are responsible for the FEGP Assets”*

## Fundamentally...

Removal of Equipment + Ensured Maintenance = Safer Stand



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## Sustainability

### Pre-planning

*“Pier 1 was built with the infrastructure for FEGP 10 years before it was implemented”*

## Fundamentally...

Future Proofing > Environmental Impact



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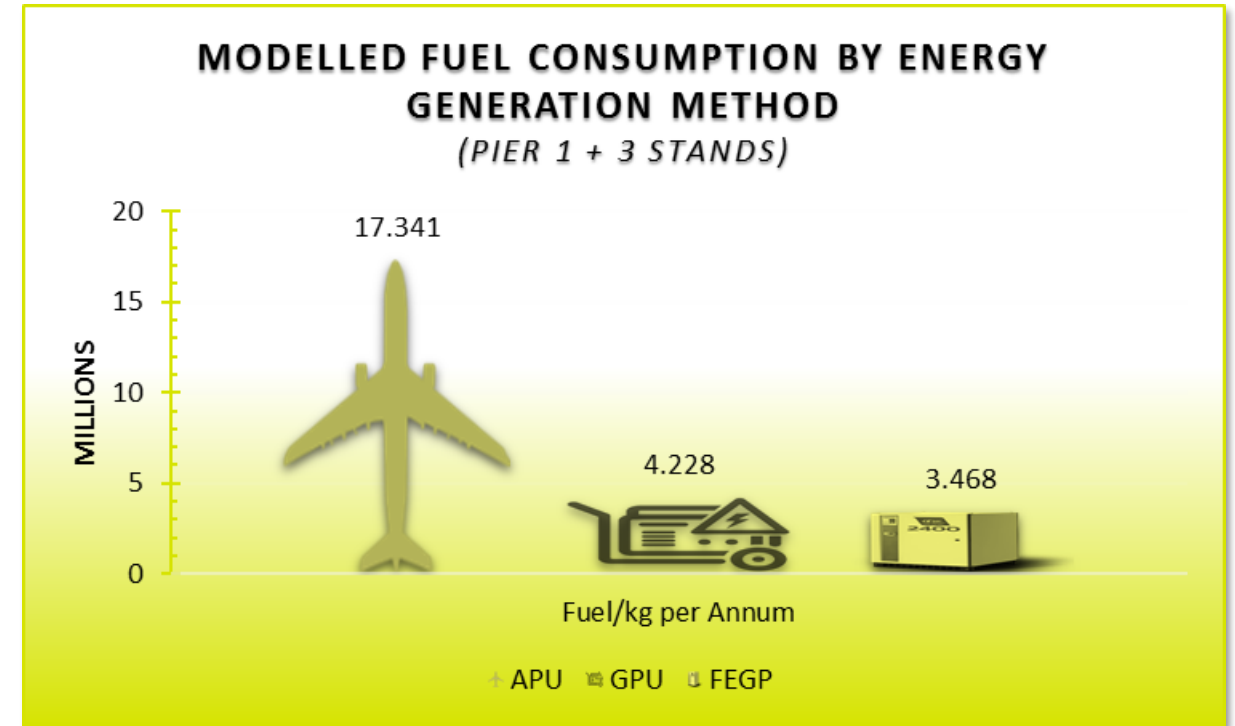
## Sustainability

### Fuel Consumption

*“FEGP results in a massive reduction in fuel consumed during generation process and removes completely transportation fuel consumption”*

### Fundamentally...

Fuel reduction = 20% to 80%



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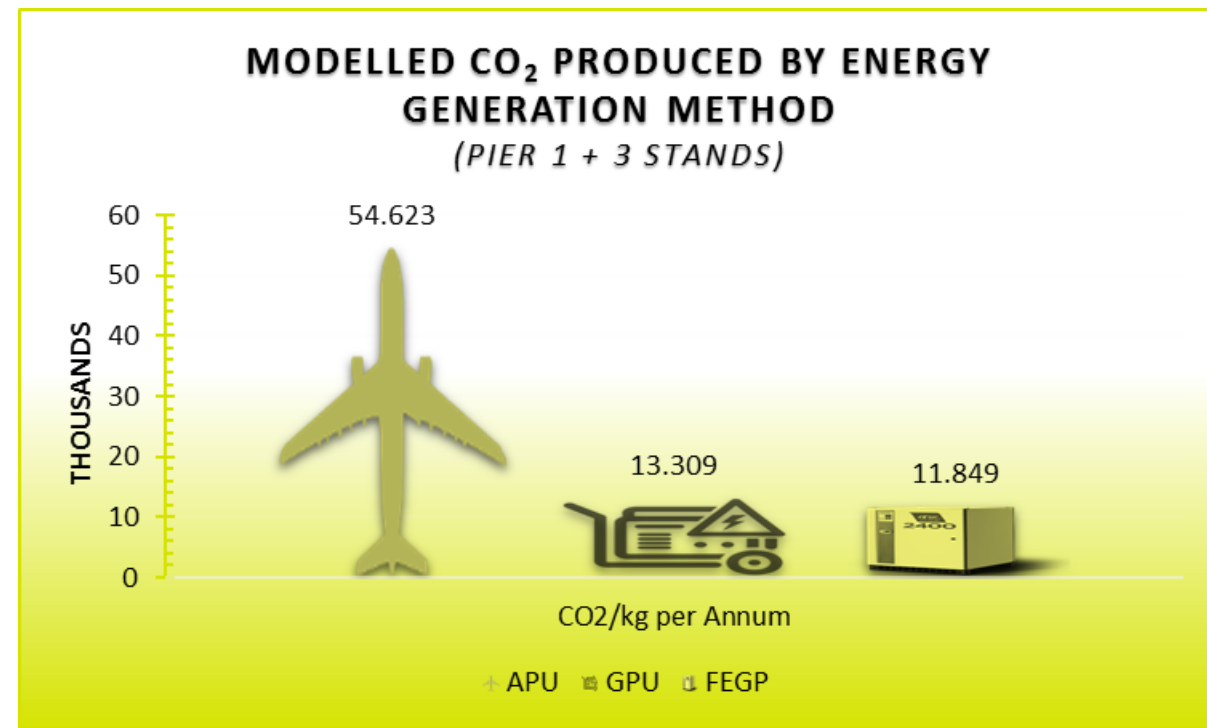
## Sustainability

CO<sub>2</sub>

*“FEGP dramatically reduces the CO<sub>2</sub> emitted into the air during stand operations”*

**Fundamentally...**

CO<sub>2</sub> reduction = 11% to 78%



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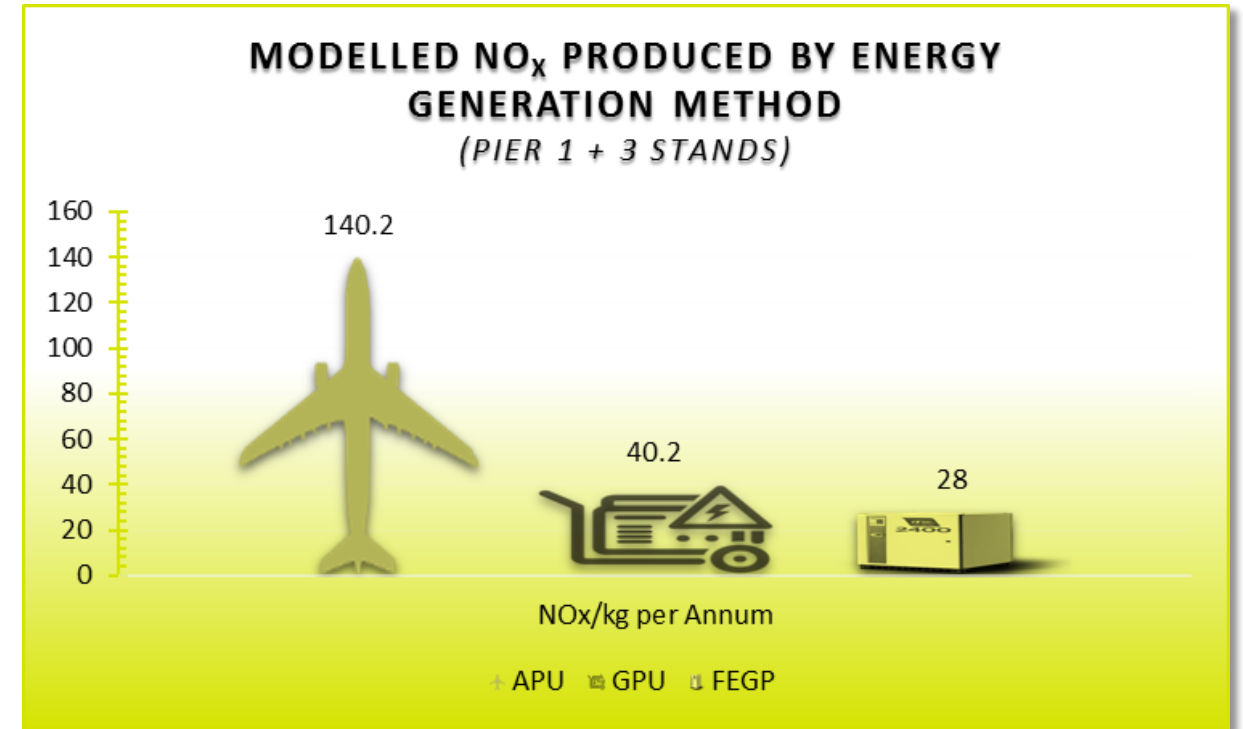
## Sustainability

NO<sub>x</sub>

*“FEGP dramatically reduces the CO<sub>2</sub> emitted into the air during stand operations”*

**Fundamentally...**

NO<sub>x</sub> reduction = 30% to 80%





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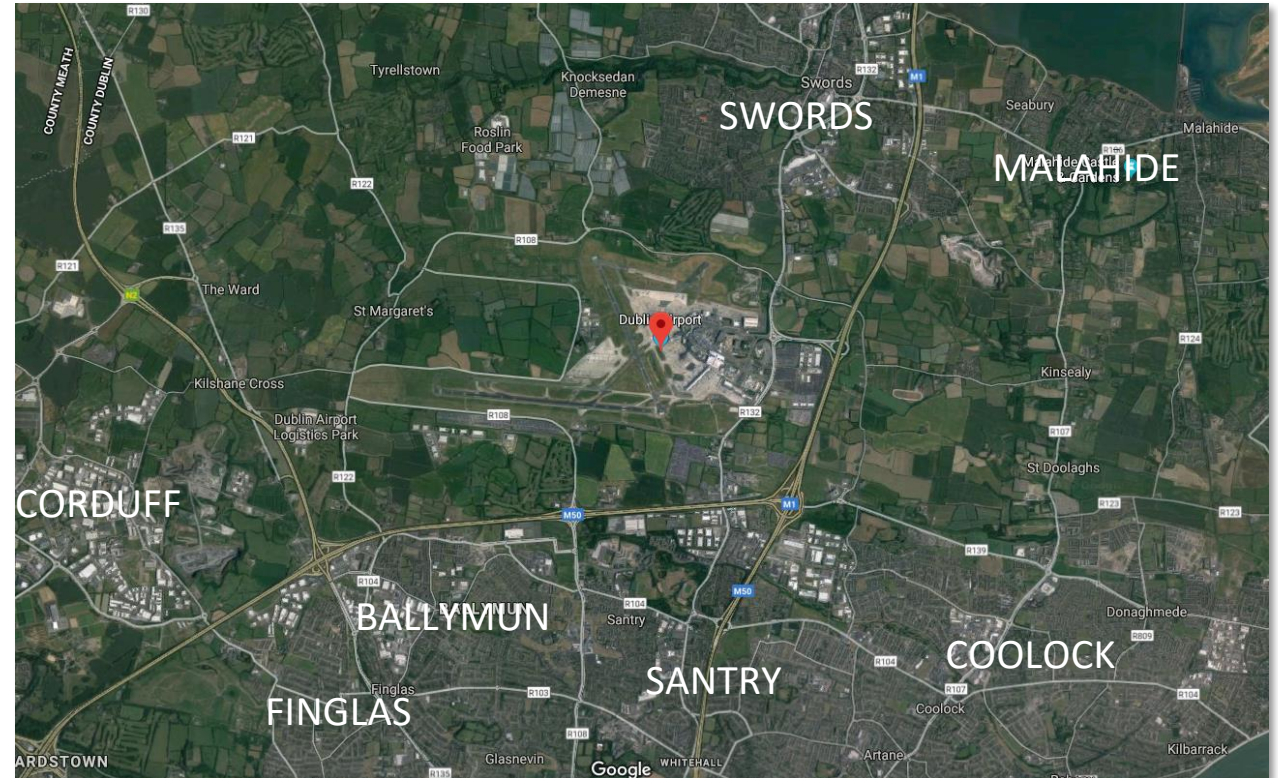
## Sustainability

No local pollutants

*“FEGP does not eliminate pollution but greatly reduces it and removes it from the Aerodrome and Greater Fingal”*

## Fundamentally...

No CO<sub>2</sub>, NO<sub>x</sub>, Noise or Particulate Matter released locally

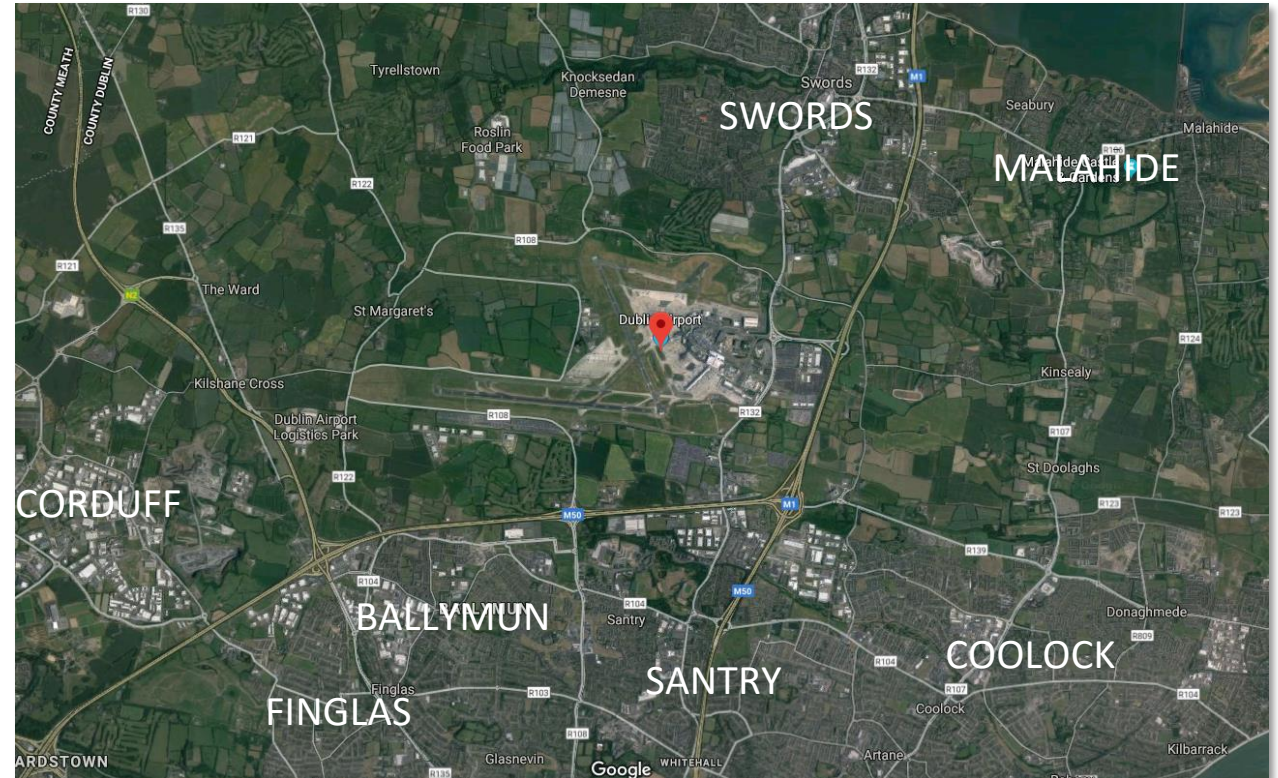


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## Sustainability

No local pollutants

*“FEGP aids in the removal of all the pollutants from our local environment; which not only meets our sustainability needs but also takes care of **Dublin Airports Number 1 Asset**.....*



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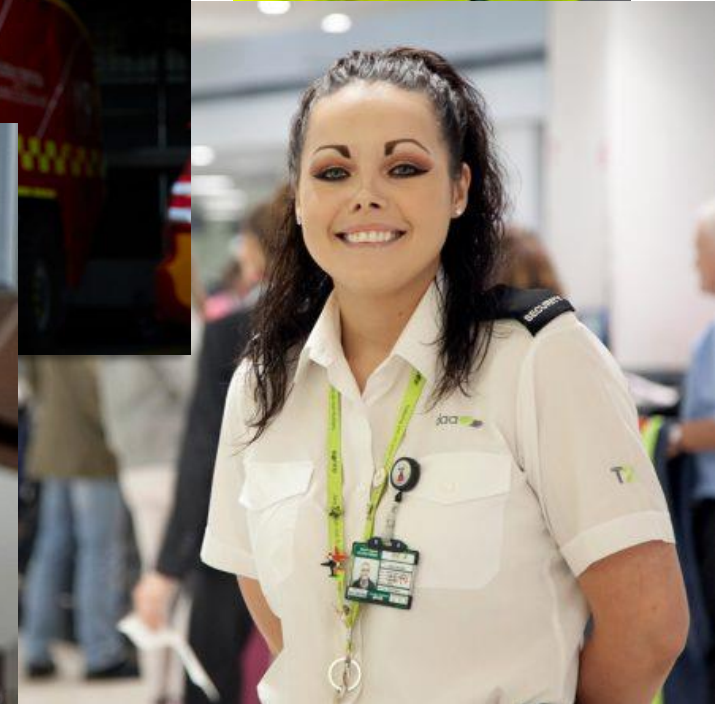
## Sustainability

No local pollutants

*“.....our Staff”*

## Fundamentally...

Majority of people employed in Dublin Airport live near Dublin Airport.



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