



***FOR A SUSTAINABLE FUTURE***

- . ON—GRID TURBINES***
- . OFF—GRID TURBINES***
- . HEATING SYSTEMS***

***Our Range:***

***0.6 kW***

***1.5 kW***

***2.0 kW***

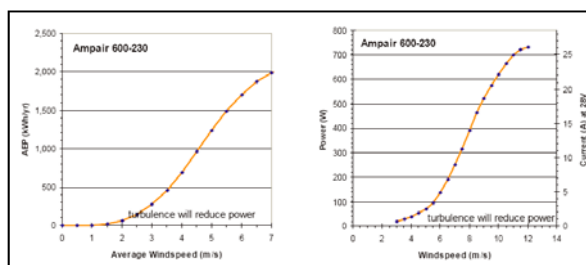
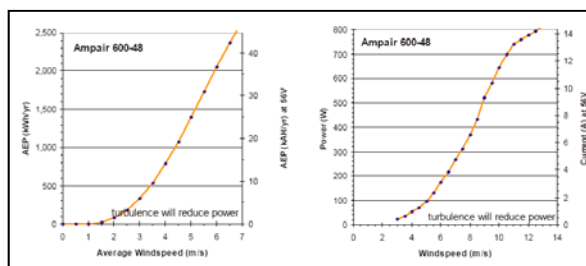
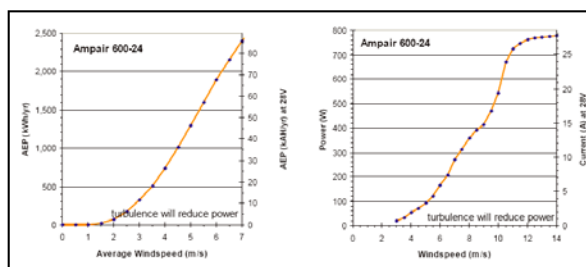
***6.0 kW***

***Tel: +353-90-96-23910 Fax: +353-90-96-23912 Web: [www.roc.ie](http://www.roc.ie) E-mail: [info@roc.ie](mailto:info@roc.ie)***

***Barnswell Grove, Mountbellew, Co. Galway, IRELAND***

## AMPAIR—0.6 kW OFF / ON GRID WIND TURBINE

RoCo Ampair 600 Watt is available in three versions. The battery charge version is available for charging, 24V or 48V battery banks and the grid-connected version is available for connection to 240V electrical network ('the grid').



### NOTE:

- TWO YEARS of warranty
- Service can be offered by our company after the warranty period

	24 V DC battery charge	48 V DC battery charge	230 V AC grid connected
Reference power at 11.0m/s (24.6mph)	723 W (into battery)	741 W (into battery)	698 W (into grid)
Reference annual energy at 5.0 m/s	1300 kWh/yr; 48 kAh/yr	1394 kWh/yr; 25 kAh/yr	1232 kWh/yr (to grid)
Cut-in windspeed	3.0 m/s	3.0 m/s	3.0 m/s
Cut-out windspeed	n/a	n/a	n/a
Maximum power	1050 W	1140 W	730 W
Maximum voltage	24 V nominal	48 V nominal	230 V nominal
Maximum current	30 A	17 A	3.2 A
Power form	24 V DC	48 V DC	230 V AC single phase 50Hz
Power input	<0.5 W	<0.5 W	0.1 W sleep, <4 W standby
Rotor swept area	2.27m <sup>2</sup>		
Generator output	3-phase AC (to external rectifier)		
Turbine diameter	1.70 m		
Overspeed control	Blade pitch control and dump load		
Weight	16.0 kg (turbine head including blades & tail fin)		
Construction	powder coated die cast aluminium body; 3 blades of GRP construction		
Generator	direct drive NeFeBr permanent magnet generator producing three phase		
Noise	Max 1-3 dBA above background		
Longevity	Expected 15 year operational life		

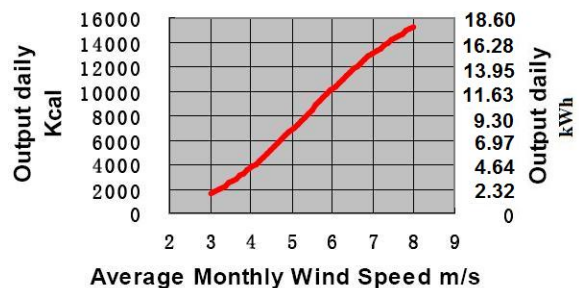


## **TAOS – 1.5kW WIND HEATING SYSTEM**

RoCo is proud to introduce a complete new range of wind heating systems to the Irish market. This systems can be used as a secondary heating for oil / gas boilers to save energy and reduce the CO<sub>2</sub> emissions.



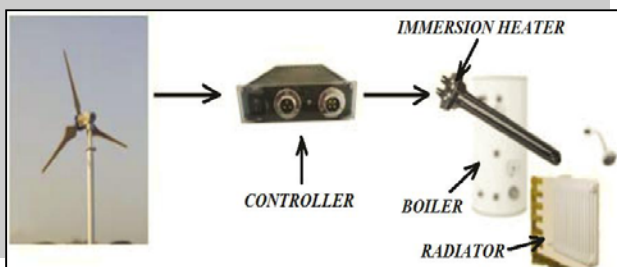
It can produce nearly 10,000 Kcal / day at a monthly average wind speed of 6m/s.



In other words, it can heat a 200 litres tank up to 50°C and reduces the CO<sub>2</sub> emissions by up to 20Kg / day.

### **Specifications:**

- Rotor Diameter..... 2.8m
- Start-up wind speed..... 3m/s
- Cut-in wind speed..... 2,6m/s
- Rated wind speed..... 12m/s
- Rated output..... 1,500W
- Survival wind speed..... 60m/s
- Turbine weight..... 42kg
- Alternator ..... 3-phase PM
- Blades ..... super strength plastic



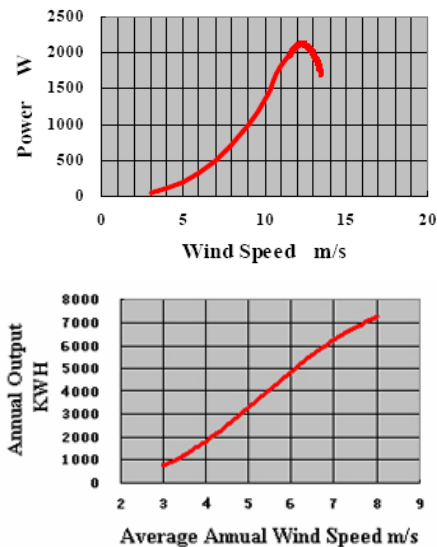
### **NOTE:**

- All our products come with TWO YEARS warranty
- Service can be offered by our company after the warranty period expires



## TAOS – 2kW GRID TIE WIND TURBINE

RoCo is proud to introduce the smallest 2kW Grid Tie Wind Turbine to the Irish market. Featuring a creative downwind passive yawing, a very reliable programmed microprocessor controller and an efficient on-grid inverter, the GT2kW is the best option for grid applications.



### Specifications:

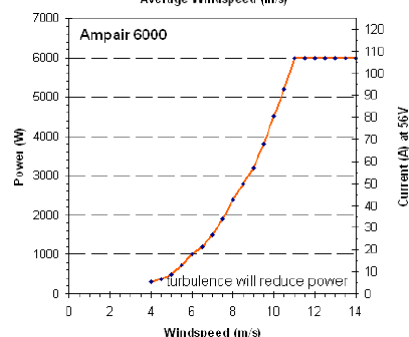
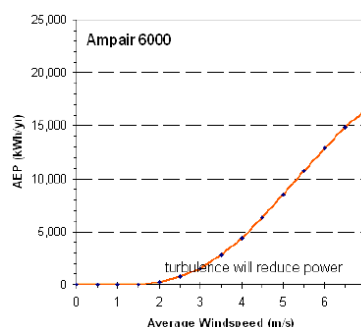
- Rotor Diameter..... 2.8m
- Start-up wind speed..... 3m/s
- Cut-in wind speed..... 2,6m/s
- Rated wind speed..... 12m/s
- Rated output..... 2000W
- Survival wind speed..... 60m/s
- Turbine weight..... 42kg
- Alternator ..... 3-phase PM
- Blades ..... super strength plastic



### NOTE:

- All our products come with TWO YEARS warranty
- Service can be offered by our company after the warranty period expires

### AMPAIR – 6.0kW WIND TURBINE



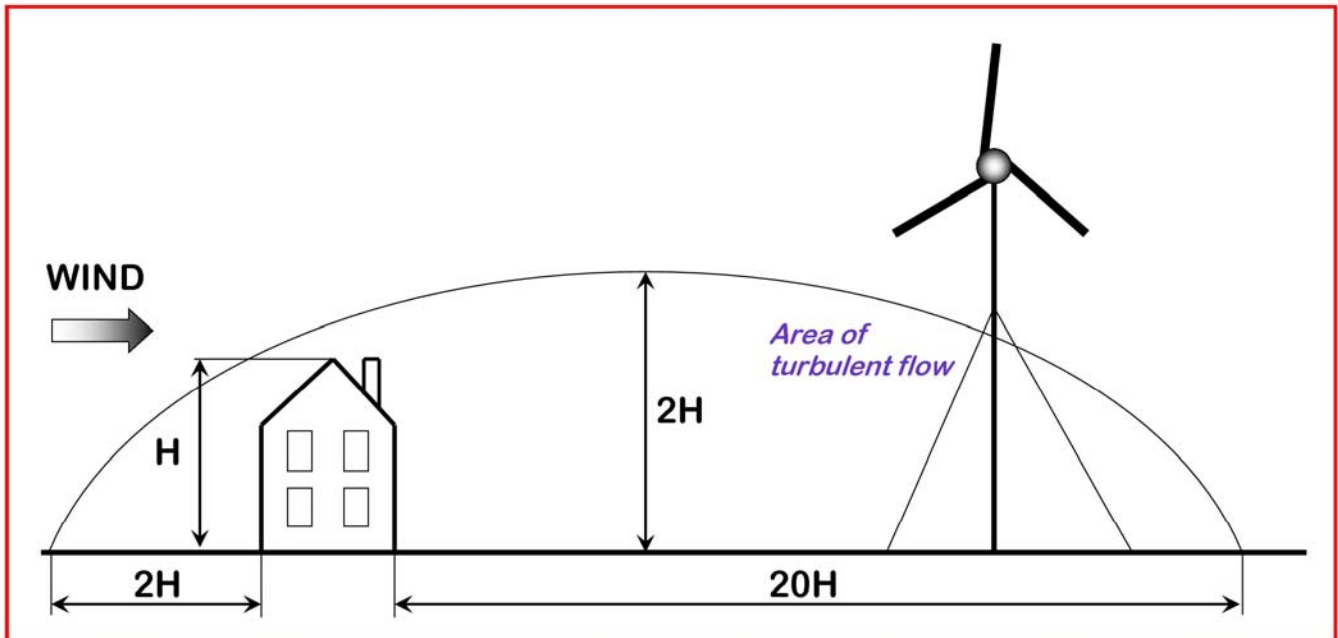
#### NOTE:

- All our products come with TWO YEARS of warranty
- Service can be offered by our company after the warranty period

	220-240 V AC grid-tie	48V DC battery charge
Reference power at 11.0 m/s (24.6 mph)	6000 W (into grid)	6000 W (into battery)
Power form	230 V AC, 50Hz 240 V AC, 60 Hz	48 V DC
Reference annual energy at 5.0 m/s (11.2 mph)	8500 kWh/yr	
Starting wind speed	3.0 m/s (6.7 mph)	
Cut-in wind speed	3.5 m/s (7.8 mph)	
Cut-out wind speed	15 - 25 m/s (33–56 mph)	
Survival wind speed	65 m/s (140 mph)	
Maximum power	6000 W	
Maximum voltage	600 V into inverter	
Maximum current	10.9 A into inverter	
Direction of rotation	Clockwise looking downwind	
Rotor swept area	23.74 m <sup>2</sup> (255 feet <sup>2</sup> )	
Rotor diameter	5.5 m (18 feet)	
Rotor speed	70 – 240 rpm	
Generator output	Three phase to regulator or inverter	
Over speed control	Electronic speed control & triple redundant relay brake	
Weight	154 kg body + 36 kg blades = 190 kg total (419 lbs)	
Body construction	Marine grade powder coated aluminium castings with marine grade stainless steel fittings	
Blade construction	Glass filled polypropylene (twintex™)	
Generator type	Direct drive NeFeBr permanent magnet brushless	
Towers	10m and 15m tilt-up monopole	
Noise	54 dBA at 30m from turbine in 11 m/s wind	
Longevity	20-year design life	
Inspection	Annual visual inspection from ground level	
Temperature range	-20°C to +40°C ambient	



## INSTALLING A TURBINE:

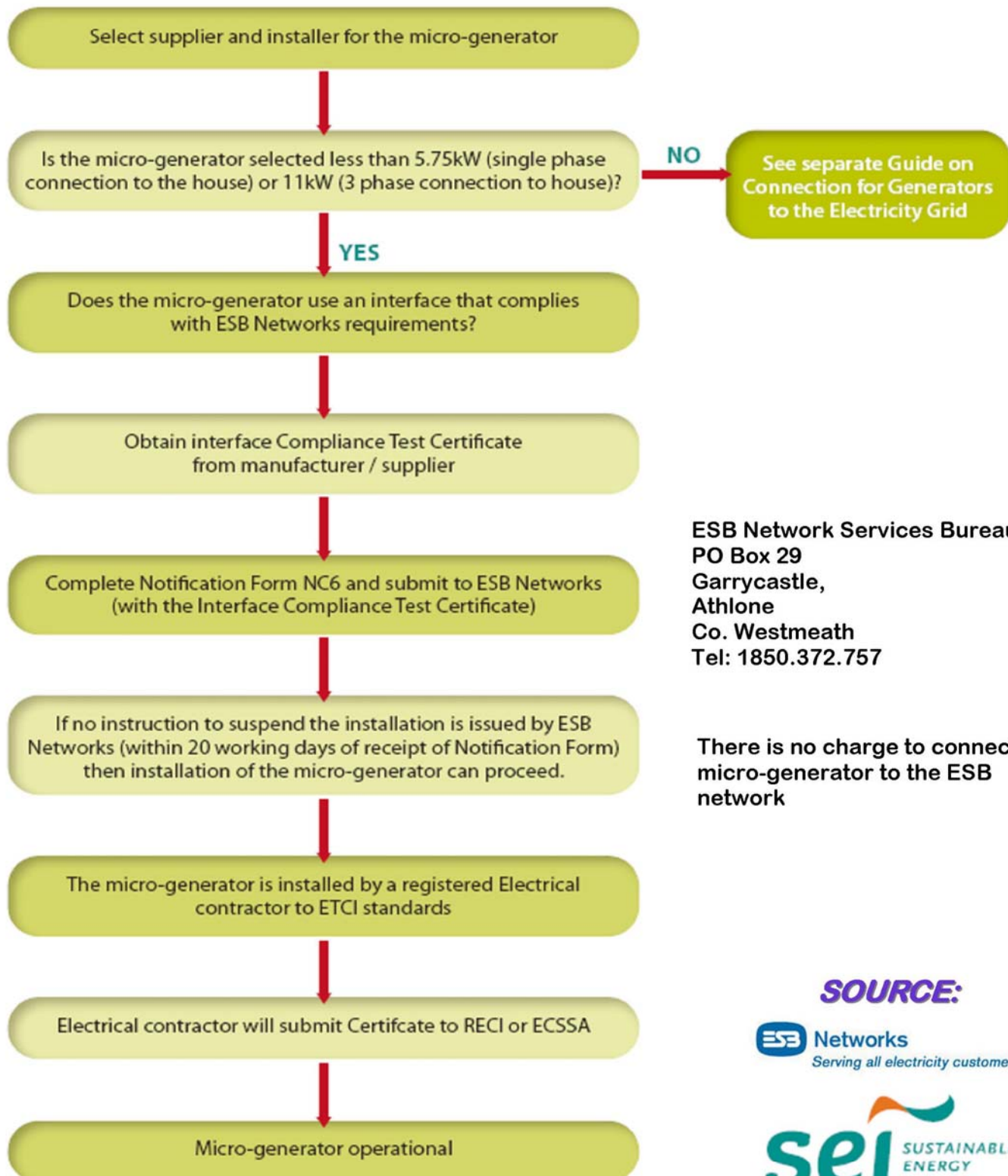


- **THE MAST SHOULD BE AT LEAST TWICE THE HEIGHT OF THE HOUSE IF IT IS ERECTED BESIDE IT**
- **THE MAST SHOULD BE AT LEAST 6M HIGHER THAN THE HIGHEST OBSTACLE WITHIN 150M**
- **DO NOT FIT THE TURBINE ON THE ROOF OF THE HOUSE**

## ***CERTIFICATION:***

[illegible]

## ***IS YOUR SITE SUITABLE FOR WIND GENERATOR?***



ESB Network Services Bureau,  
PO Box 29  
Garrycastle,  
Athlone  
Co. Westmeath  
Tel: 1850.372.757

There is no charge to connect a micro-generator to the ESB network

### ***SOURCE:***

 **ESB Networks**  
Serving all electricity customers

 **sei** SUSTAINABLE  
ENERGY  
IRELAND



## ***FOR A SUSTAINABLE FUTURE***

- ♦ Less than **25A – single phase** connection to the house – this is equivalent to a maximum output of **5.75 kW**
- ♦ Less than **16A – 3 phase** connection to house – this is equivalent to a maximum output of **11 kW**
- ♦ The Public Electricity Supplier (ESB Customer Supply) will offer an export payment of **9 cents per kWh**.
- ♦ As an initiative to support micro-generation, ESB will provide an **extra support payment of 10 cents per kWh** for the first 3,000kWh exported annually. This payment will be made to the first 4,000 micro-generators connected in the next 3 years and will be paid over a 5 year period
- ♦ ESB will provide **import/export metering free of charge** to the first 4,000 domestic customers installing micro-generators in the next 3 years
- ♦ Due to safety conditions, any generator connected to the ESB network cannot be used if the electricity supply is off or de-energised.

Appliance	Rating (W or kW)	Current (A) flowing at this power (single phase)
Microwave oven	600 W	2.6 amps
Television	200 W	0.87 amps
Single bar electric fire	1000 W (1 kW)	4.35 amps
Kettle	3000 W (or 3 kW)	13.04 amps
Electric shower	8000 W (or 8 kW)	34.78 amps





## MICRO-GENERATOR NOTIFICATION FORM

Please return this form to:  
 Micro-Generation Notification,  
 ESB Networks, P.O. Box 29,  
 Garrycastle, Athlone, Co. Westmeath

Please fill in all sections in BLOCK CAPITALS

<b>Site Details:</b>	Site Name:
	Site Address: _____ _____ _____
	Site Co-ordinates:                      Easting:                      Northing:

<b>Applicant Details:</b>	Full Name of the applicant: _____
	Address of the applicant: _____ _____
	MPRN Number(if available)
	Telephone No. Mobile:
	Email Address:
	Installer/Consultant:      Phone No

<b>Micro-generation Interface details</b>	Unit 1	Unit 2	Unit 3	
	Micro-generation interface unit manufacturer / model / type			
	Serial number of micro-generator interface unit			
	Are interface protection settings as per Table 1 in "Conditions Governing the Connection and Operation of Micro-generation?"			

<b>Micro-generator details</b>	Unit 1	Unit 2	Unit 3	
	Micro-generator details			
	Micro-generation rating (kVA)			
	Single or multi-phase			
	Type of prime mover and fuel source [wind, solar, micro-CHP, diesel. if others specify]			

Form NC6



1

**MPRN Number:** This is a unique 11-digit number that is assigned to every electricity connection / meter in the country. If the micro-generator is to be connected to an existing electrical connection, then the relevant MPRN number can be found on your electricity bill. If the micro-generator is to be installed in a new building that does not yet have an MPRN number then this field can be left blank, but the ESB Networks Micro-Generation Notification NC6 form should accompany the application for a new electrical connection that would be submitted in the usual manner. Please see ESB Networks website for information on applying for a new electrical connection.



2

**Site co-ordinates:** The site co-ordinates requested in this form are the Easting and the Northing co-ordinates of the premises in which the micro-generator would be installed. These can be found from a 1:50,000 Discovery Series Ordnance Survey (OS) map. Easting co-ordinates are the numbers on the horizontal axis. Northing co-ordinates are the numbers on the vertical axis. Information on 'How to give a grid reference' can be found in a panel on the right hand side of all OS Discovery Series maps. Alternatively, you can obtain the longlat references from a satellite navigation system (satnav) and use the converter available on the OSI website.

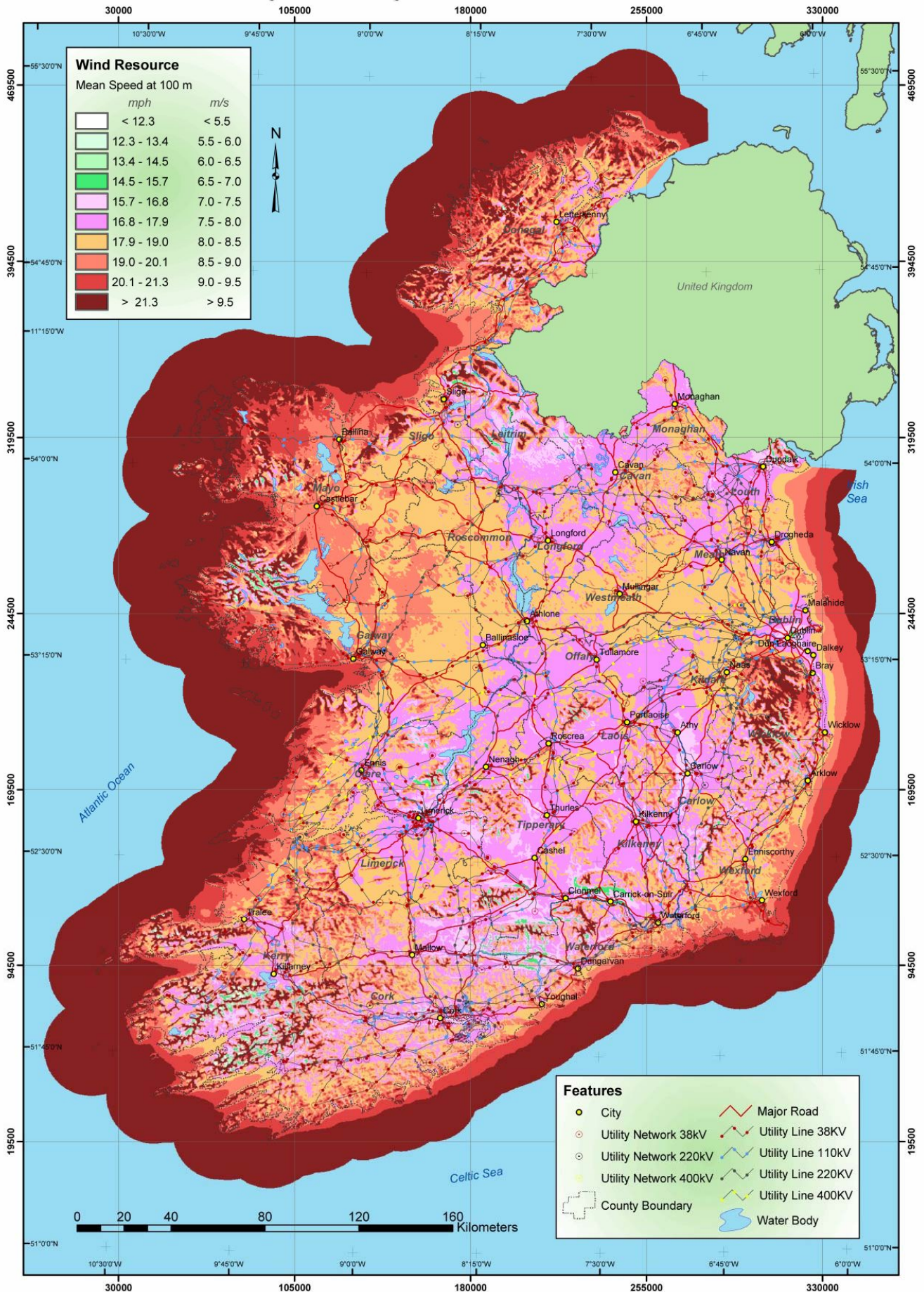


3

Your supplier will be able to provide you with the details of the micro-generator and interface unit required to complete this form. In addition to this information, a copy of the Interface Compliance Test Certificate should be enclosed along with the application form. If ESB Networks do not respond to the ESB Networks Micro-Generation Notification NC6 form within 20 working days then the micro-generator can be installed.



# Wind Speed Map of Ireland at 100 Meters



**RENEWABLE ENERGY  
FOR EUROPE**  
Campaign for Take-Off



**TrueWind Solutions**

Coordinate System: Irish National Grid  
Spatial Resolution of Wind Resource Data: 200m  
This map was created by TrueWind Solutions using the MesoMap system and historical weather data. Although it is believed to represent an accurate overall picture of the wind energy resource, estimates at any location should be confirmed by measurement.



**ESB INTERNATIONAL**



**SEI** SUSTAINABLE  
ENERGY IRELAND  
Renewable Energy Information Office