

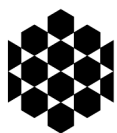
# Department of Agriculture and Rural Development

**DARD**

**Review of the**

**Wind Energy for Rural Businesses Project**

**Funded through the N I Programme for Building Sustainable Prosperity, part of  
the EU Structural Funds for 2000 to 2006.**



Department of  
**Agriculture and  
Rural Development**

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### **Abbreviations**

A & T	WREAN's Assessment and Technical Panel
BERR	Dept for Business Enterprise and Regulatory Reform
BRE	BRE Global Ltd (Agent appointed by BERR)
BSP	Building Sustainable Prosperity Programme
CPD	The Dept of Finance and Personnel's Central Procurement Division
DARD	Dept of Agriculture and Rural Development
DTI	Dept of Trade and Industry
DETI	Dept of Enterprise Trade and Industry
DFP	Department of Finance and Personnel
DOE	Dept of Environment
DSO	Departmental Solicitors Office
EA	Economic Appraisal
EETS	Energy Equipment Testing System
EST	Energy Savings Trust
ESU	DARD's Economic and Statistics Unit
GPA	The Dept of Finance and Personnel's Govt Purchasing Agency (now CPD)
H & SE	Health and Safety Executive
IFB	Intermediary Funding Body
LoO	Letter of Offer to applicants to the WERB project

NIPBSP	Northern Ireland Programme for Building Sustainable Prosperity
RBT	Renewable Building Technologies Ltd
RDP	Rural Development Programme
RES	Renewable Energy Systems (J A Graham)
TCIR	TCI Renewables
UFU	Ulster Farmers Union
WERB	Wind Energy for Rural Businesses
WREAN	Western Regional Energy Agency Network

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**1. EXECUTIVE SUMMARY**

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## **EXECUTIVE SUMMARY**

### **1.1 INTRODUCTION**

Kevin Murphy, Head of European Policy Branch, Department of Agriculture and Rural Development (DARD) was appointed by Dr Malcolm McKibben, DARD Permanent Secretary, to conduct a Review of the Wind Energy for Rural Businesses (WERB) project.

The purpose of the Review was to adhere to the Terms of Reference and in doing so inform DARD Senior Management of the key issues arising and lessons learnt for the development, management and administration of future projects.

### **1.2 TERMS OF REFERENCE**

The Terms of Reference are outlined at page 25 of the Report.

As per the Terms of Reference DARD commissioned TCI Renewables (TCIR) to assess the technical aspects of the project and produce a “stand alone” Report.

In September 2003 Western Regional Energy Agency Network Ltd (WREAN) submitted an application to the Programme for Building Sustainable Prosperity (BSP) for the Wind Energy for Rural Businesses (WERB) project.

The project aimed to protect and enhance the environment and encourage the use of renewable energy technologies by grant aiding (to a maximum of 50%, capped at £15,000) 30 wind turbines to assist with meeting energy costs of rural businesses located across NI.

### **1.3 WREAN**

WREAN was established in 1995 as N.I.’s first local energy agency in order to provide free, impartial and informed energy efficiency advice to householders and small businesses. In making their application WREAN was applying to act as an Intermediary Funding Body (IFB) to promote renewable energy across N.I.

ASM Horwath, who carried out the independent Economic Appraisal on WREAN’s application, stated:

*“We are satisfied that WREAN has sufficient skills and resources to implement and manage the project, with provision having been made for the recruitment of a dedicated Project Advisor, formation of an Assessment Panel comprising representatives from each of the relevant organisations and the procurement of external assistance.”*

At present the WREAN Board remains in existence but there is no full time staff. To facilitate the closure of the WERB project the Review Team were

advised that the previous Project Officer works on an ad-hoc part-time basis for WREAN. When drafting the Report it was anticipated that WREAN would close at the end of September / early October 2008. WREAN advised they have remained in operation due to the problems with the WERB project.

The Review Team has advised DARD to ensure Contracts are in place to cover WREAN's continued involvement in the project. WREAN is presently negotiating the final settlement of invoices from their Technical Consultant, Renewable Building Technologies (RBT).

#### **1.4 SELECTION PROCESS**

An Independent Selection Panel subjected each of the applications submitted under the BSP 2003 call to assessment. The WREAN project was approved and awarded £600k from BSP.

#### **1.5 CONTRACT FOR FUNDING**

On the 9 June 2004 DARD issued a Contract to WREAN "to act as an agent" for the Department to deliver the Wind Energy for Rural Businesses project. As an agent WREAN was an Intermediary Funding Body (IFB).

#### **1.6 TECHNICAL CONSULTANT**

On the 17 October 2004 WREAN issued a letter of appointment (Annex 3) to Renewable Building Technologies Ltd (RBT) to act as their Technical Consultant and provide advice on issues such as site selection and tendering.

#### **1.7 APPOINTMENT OF PROJECT OFFICER / PROJECT ADVISOR**

Recommendation 1.54 (g) in the EA stated:

*"an appropriately senior and experienced Project Advisor should be recruited"*

The EA also states:

*"this is an inherently risky project. It involves emerging technology. There is a limited amount of local experience, or expertise in terms of planning, initiating or managing a project of this nature. By definition this is likely to present operational difficulties at a practical level".*

*"We draw attention to the fact that there is a dearth of experience in managing projects of this nature which makes it all the more difficult to have assurance with regard to WREAN's ability to recruit an appropriately senior and experienced member of staff. In these circumstances, we consider it to be essential that DARD have input in the selection process to ensure that the member of staff appointed is appropriately qualified."*

DARD advised that WREAN attempted to fill this post by advertising for a Project Advisor. The advert stated:



*“WREAN now seeks to appoint a Senior and Experienced Project Advisor to be responsible for WREAN’s delivery, marketing and administration of the Department of Agriculture and Rural Development’s Wind Energy for Rural Businesses project”*

WREAN held initial selection interviews but no appointment was made. WREAN’s letters of 7 September 04 to unsuccessful applicants stated:

*“WREAN received a limited number of applications in relation to this post; none of which were deemed by the interviewing panel to meet the specific needs of the position”*

WREAN then devised an amended Job Description and re-advertised for a Project Officer as opposed to Project Advisor. The main differences in the two posts were:

- In respect of qualifications and experience the Project Advisor was required to have an energy degree in energy engineering or environmental discipline with at least 6 months project management skills. While the Project Officer was required to be educated to at least A Level standard and have knowledge of the Renewable Energy Sector.
- The Project Officer was to work *“in consultation with the WREAN Director to plan and deliver all aspects of the Wind Energy for Rural Businesses project”*. Whereas the Project Advisor would be responsible for this work.

It should also be noted that a member of WREAN’s Selection Panel stated:

*“We looked at the job description and our advice is that the salary is slightly high for what you need is basically a competent administrator. We would recommend putting a greater stress on Admin function and split the role out in categories in the job description.”*

The salary for the Project Officer was set at £13,000 - £14,000.

A DARD representative sat on the Interview Panels in an advisory capacity.

The Project Officer commenced work on 28<sup>th</sup> October 2004.

DARD advised that while the post was set at a lower level than that recommended in the EA on-going support was available via the Director of WREAN. DARD contends that while the specific requirements of the EA were not met it was felt by DARD and WREAN that the management structure would be sufficient to meet the needs of the project.

On the 11 August 2005 WREAN sought, and obtained DARD's approval, to second a Technical Officer with experience in renewable energy to work on the WERB project on a temporary part-time basis.

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## **Comment**

Having considered the importance of this post to the success of project as set out in the Economic Appraisal (EA) the Review Team consider that the appointment by WREAN does not meet the requirements of the EA. This comment is based on the low salary established in the EA which the Review Team concludes would not have attracted "a senior and experienced member of staff". It is also the opinion of the Review Team that the second advert should have stipulated that the person should have a recognised qualification relating to the renewable energy sector as opposed to "educated to A- level standard".

The Review Team consider that WREAN and DARD who had, per the EA, to be involved in the Selection Process, failed to recruit a Project Advisor to meet the actual demands of the job which materialised.

By appointing what was in essence an administrative officer, WREAN diluted the role of the only full time member of staff dedicated to the WERB project. Therefore the recommendation in the EA was not adhered to.

On the 11 August 05 WREAN sought and obtained DARD's approval to second an officer with experience in renewable energy to work on the WERB project on a part time basis. Despite this the Review Team concludes the involvement of an appropriately senior and experienced member of staff was not in place at all times. Furthermore it is our opinion that setting the salary level at £17,500 in the EA compromised the possibility of attracting a suitable candidate.

The Economic Appraisal highlighted the risks associated with this project. The Consultants recommendation to appoint a senior and experienced Project Advisor was part of the process required to manage this risk. Whilst WREAN and DARD considered that the Management Structure was sufficient to meet the needs of the project, given the difficulties with the project, it was evident that it was not. The Review Team consider that WREAN placed too much reliance on the Project Officer who carried out more than the administrative role that WREAN had recruited this officer to do. WREAN should have provided more direction and guidance to the Project Officer.

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## 1.8 WREAN'S CALL FOR APPLICATIONS

In November 2004, WREAN acting as DARD's agent issued a call, under a competitive process, for applications. 64 applications were received, 50 were deemed eligible. In May 2005 WREAN's Selection Panel scored the 50 eligible applications and approved 30 applications for funding, entered 6 on to a reserve list and rejected 14.

## 1.9 ISSUE OF LETTERS OF OFFER

Between July 05 and January 06 DARD issued Letters of Offer (LoOs) to the successful applicants. In a covering letter attached to the LoOs DARD stated:

- *"The pre-conditions stated on the Letter of Offer should be satisfied as soon as possible and at the latest 3 months from the date of this letter. If you are in any doubt regarding these or any other terms of the offer, I suggest that you discuss the matter with you legal representative.*
- *I would also advise that you should consider appointing a suitably qualified professional in the development of your project.*
- *If you require further clarification on the terms of the attached letter of Offer, please do not hesitate to contact me".*

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### Comment

DARD advised that the requirement to seek professional advice was inserted to avoid a potential conflict of interest in respect of the role of RBT who were employed by WREAN. RBT was required to carry out the duties listed in their letter of appointment, which did not include providing on-going direct advice to applicants.

None of the project applicants sought professional advice but stated they placed reliance on DARD's involvement as a Government Department, WREAN and the appointed consultants RBT Ltd.

The Review Team considers that on accepting the LoO the WERB applicants should have assumed greater ownership and responsibility for the project funded under BSP.

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## 1.10 ROLES AND RESPONSIBILITIES

As outlined in paragraph 3.19 and throughout the Report the Review Team is concerned at the apparent lack of clarity as to roles and responsibilities of the stakeholders involved in the delivery of the project e.g. DARD, WREAN, RBT, WREAN's Assessment and Technical Panel (A & T) and the applicants. The Review Team consider that this led to confusion and contributed to the weaknesses that have been identified by the Team.

## 1.11 PROCUREMENT

DARD has responsibility for ensuring that public procurement procedures are applied to projects supported under the Rural Development Programme (RDP).

Given that the WERB project involved emerging technology and the quantitative analysis within the Economic Appraisal (EA) highlighted the sensitivity to input cost variation (the cost of turbines etc) the EA stated:

*“It is essential effective procurement systems are established and that appropriate support, service and maintenance arrangements are established at the outset.*

This condition was included in the Contract for funding to WREAN which stated that funding was conditional on effective tendering and procurement procedures being put in place regarding technical assistance, turbines and installation services.

In view of the importance of the tendering process, when selecting their Technical Consultant, WREAN stated in their advertisement that the responsibilities of the Technical Consultants would include:

- Preparation of the tender paperwork for the supply and installation of the turbines and to manage the tender exercise.
- Assistance with the development of criteria for the selection of proposals to be funded by the project.

The tendering process became complicated because two attempts were made to implement procedures, which satisfied the requirements of DARD and DFP.

## 1.12 INITIAL TENDER PROCESS

Under the initial tender process the Assessment and Technical Panel (A & T) agreed that RBT would source a list of 20 kW Wind Turbines available on the market.

Part of the criterion was:

*“Only installers currently on the Clear Skies list will be able to apply to tender to install / supply turbines”.*

RBT advised the Review Team that the aim of appointing one installer / supplier for all project applicants was to deliver economies of scale.

Renewable Energy Services (RES) was identified as the preferred tenderer. However, DARD

*“expressed concerns that the tender process adapted thus far was flawed”*

because:

- *“Given the value of the Contract it was over the European threshold of £96K the Contract should have been advertised in Europe which would not seem to have been the case.”*
- *Any tenders that were sought were only via placement of an ad on one website.*
- *There appeared to have been significant negotiations with the single bid that was received and they surmised that the specification following negotiation would have been significantly different from the one contained in the original tender document.”*

Therefore advice was sought from the Department of Finance and Personnel’s Government Purchasing Agency (GPA). Consequently, this initial tendering exercise was abandoned.

### **1.13 REVISED TENDER PROCESS**

At the beginning of January 05 a decision was made by DARD, WREAN and Central Procurement Division to move forward with a public tendering process to be undertaken by each of the project applicants. The following process was adopted:

- To provide advance notice of the WERB project, WREAN placed the main advert in the Belfast Telegraph, Irish News and News Letter
- In due course the 26 individual project applicants placed adverts in the Belfast Telegraph seeking Tender Fee Proposals from suppliers. Only two companies responded i.e. Adman Ltd and Renewable Energy Services.
- WREAN provided sample tender packs for use by applicants.
- WREAN provided Tender Selection Scoring Criteria to applicants.
- WREAN advised project applicants not to open their tender proposals until WREAN were present.
- WREAN staff visited each applicant to provide guidance on the scoring of tenders using the pro-forma “Scoring of Selection Criteria”.
- The applicant issued the letters of appointment and rejection.

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#### **Comment**

RBT advised the Review Team that it was made clear to them that they could not get involved in the second tender process because of a potential Conflict of Interest. RBT advised that they provided WREAN with sample tender documents, which stated that the installer and equipment should have been on the Clear Skies List. RBT added that they were unaware that WREAN had removed this requirement from the sample tender pack issued to applicants and their rationale for doing this.

Despite RBT's stated position of not getting involved in the second tender exercise it is noted that at a meeting on 22 July 2005, which RBT requested to agree the content of the tender pack, the minutes state that should individual project applicants have any questions regarding the tendering process they were to be referred to RBT.

As the content of the tender pack was agreed at this meeting the Review Team is unclear why WREAN would have taken it upon themselves to remove the Clear Skies accreditation, which was previously a mandatory requirement.

The Review Team conclude that:

- WREAN took partial control of the tender process by being present at the opening and scoring of all the tenders.
  - There was considerable misunderstanding for all stakeholders throughout the tendering process, as there did not seem to be a lead organisation taking overall responsibility.
  - WREAN should not have issued a tender pack to applicants without quality assuring the final content of it with either their Assessment and Technical Panel or RBT, neither of which appear to have happened.
  - Confusion appears to have arisen as to the interpretation of DARD's advice on Conflict of Interest. It appears to have been interpreted by WREAN and RBT that RBT could not advise WREAN during the second tender process.
  - WREAN should have involved RBT, as their Technical Consultant, in all stages of the second tender process.
- 

#### **1.14 SCORING OF SELECTION CRITERIA**

The revised tender process required each individual applicant to be responsible for scoring their own tenders, however, after examining the project files and speaking to the project applicants it appears that all of the Selection Scoring Criteria sheets were actually completed by WREAN with many of the "Notes" simply replicated from one applicant's sheet to another. The Review Team regard this as inappropriate practice and WREAN should have briefed their staff on their responsibilities before the Scoring of tenders was undertaken on the applicant's premises.

The Selection Scoring Criteria covered a number of Criterions. The main findings of the Review Team are:

##### **(Criterion 2) History of Company**

- Despite the fact that Adman Ltd was only established in January 2005, the tender submitted by Adman Ltd was awarded the maximum 5 points under "Company History".
- The Review Team was advised by Adman that:

*“there was no formal partnership between Adman Ltd and EETS”.*

Hence, no formal written agreement existed between Adman and EETS Ltd or EETS Wind Ltd. The Review Team considers the statement from Adman Ltd in their tender document about their “partnership” with Energy Equipment Testing Service (EETS) was ambiguous and was misinterpreted by WREAN and the applicant.

**(Criterion 3) Quality of Product**

- EETS Wind Ltd advised that no quality assurance was undertaken when importing the turbines used under the WERB project. The Health & Safety Executive (HS&E) expressed:

*“serious doubts that the design / manufacturing standards of the machine supplied and erected at his premises (and the other identical machines erected at other locations) were adequate.”*

**(Criterion 4) Efficiency of System**

WREAN predicted the energy output of the turbines based on information provided by RBT.

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**Comment**

The Review Team considers a more robust system should have been developed to check the wind speed on each approved site. The absence of this has resulted in outputs lower than anticipated.

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**(Criterion 5.) Experience of Installer**

The Supplier / Installer had to provide the applicant with evidence of having installed at least 2 similar Wind Turbines in the UK or in the Republic of Ireland and had been responsible for the design, supply, installation, commissioning, certification and demonstration of the entire system. Under this criterion it was also stated:

*“if a contractor cannot prove to have installed at least 2 similar wind turbines in the UK or Republic of Ireland they will be disqualified”.*

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**Comment**

At the time of tender:

- Adman Ltd had never installed a turbine and there were no Powerbreeze 20kW turbines operating outside of Asia.

- EETS Wind Ltd advised that the newly formed company - called EETS WIND LTD, supplied the turbines under contract to Adman. This company was importing the Powerbreeze turbine into Europe for the first time therefore the scoring should have accurately reflected this. No reliance should have been placed on the experience EETS as they were not the importer nor EETS Wind Ltd as they had never installed a turbine in the UK or ROI.

The Review Team concludes that that the applicant and WREAN should therefore have:

- disqualified Adman Ltd.
- awarded the correct scores based on the experience of EETS Wind Ltd. The scores should have been nil as EETS Wind Ltd had no experience and no accreditation.

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### **(Criterion 6) Installer Accreditation**

It was not a specific requirement for the supplier / installer / product to be registered with Clear Skies. Registration meant they were awarded a higher score but they would not be deemed ineligible for having no such registration.

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#### **Comment**

A discrepancy arose in respect of the scores allocated to Adman Ltd/EETS Ltd under this criterion with full reliance being placed on EETS Ltd's provisional Clear Skies registration.

Adman Ltd was the organisation submitting the tender so if this criterion had been applied correctly then Adman Ltd should not have been awarded any score under this criterion by the applicant and WREAN.

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## **1.15. CLAIM FOR PAYMENT**

RBT's representative and the applicant signed off the RBT document called the "On Site Inspection and Commissioning of 20kW Wind Turbine". This "signing off" acted as a trigger for the release of grant payment from DARD to the applicant. However, it transpired that some of the turbines never generated electricity and others very little electricity.

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#### **Comment**

The Review Team is very concerned because RBT and applicants signed off for turbines that were clearly not operational and completed "On-site Inspection and Commissioning Reports".



Some applicants advised the Review Team that they were told by RBT and WREAN that they had to sign the On-Site-Inspection report on the day it was presented to them because failure to do so would have resulted in them losing the DARD funding of £15k.

If this is correct applicants were misinformed. DARD may have faced pressures to meet N+ 2 targets but this pressure should not have been unduly passed on to applicants. From applicant's comments, it would appear that WREAN and RBT pressurised some applicants to "sign off" turbines that applicants were aware were unsatisfactory. RBT advised the Review Team that they did not force applicants to sign off the documents but that applicants would have been aware that signed documents had to be presented to DARD before payments could be made. The Review Team cannot substantiate if pressure was exerted on applicants but as with the Letter of Offer where an applicant signs a document they are responsible for understanding the consequences of so doing.

The Review Team understands that applicants may also have been influenced by their desire to draw down the grant from DARD. However, in the opinion of the Review Team the applicant and RBT should only have signed off turbines when they were fully operational. Both RBT and the applicants were responsible for the signing off of the turbines as fit for purpose before submitting claims to DARD.

The Review Team is also concerned as to the inconsistent approach applied to the commissioning of the Powerbreeze turbines vs. the Jacobs. Also there is confusion as to what the commissioning process actually encompassed.

In the opinion of the Review Team the commissioning process was a critical stage of turbine installation but there appears to have been a lack of understanding as to who was responsible for this and the controls for ensuring that it did take place.

Before installers were appointed WREAN's Assessment and Technical Panel and RBT should have established the commissioning process. This should have been agreed and formed part of the tender.

In respect of the Powerbreeze turbines:

- Adman Ltd advised the Review Team that they were not responsible for commissioning the turbines; it was their responsibility for leaving the turbines "safe" and ready for commissioning.
- Adman issued Certificates of Completion but this does not state that they commissioned the turbine simply that the installation was completed to the satisfaction of the client.
- Adman Ltd advised the Review Team that EETS visited every site to commission the turbines, however, some project applicants could not

confirm this. In fact, project applicants often had difficulty in determining who represented which organisation.

- On speaking to EETS Wind Ltd they too were not clear as to how the Powerbreeze turbines were commissioned. EETS Wind referred to the Manufacturer commissioning the inverter, a US Agent being involved in the electrical aspect and EETS Wind completing the grid connection.
- RBT advised the Review Team that they did not attend the commissioning of either the Powerbreeze or Jacobs turbines.

This is worrying particularly as RBT indicated that at the Moy Park meeting they raised concerns about the Powerbreeze turbine not having been installed in Europe.

Furthermore because of RBT's concerns as to the Powerbreeze they insisted that EETS Wind Ltd visit China to see the turbines in operation. This occurred in April 2006 which was after the order for the turbines was placed which, in essence, was too late to raise this concern.

RBT advised that attendance at the commissioning of the turbines was outside the scope of their responsibilities. Given that RBT had expressed particular concerns about the Powerbreeze turbine the Review Team would have expected RBT to alert WREAN of the importance of commissioning and of the need to safeguard DARD's and the applicants investment.

Commissioning is further confused by the fact that RBT attended each site with a document called an "On Site Inspection and Commissioning of 20kW Wind Turbine" report. Although RBT advised the Review Team that this was merely a verification inspection report e.g. checking that equipment was on site etc the title of this document gives the report a different connotation/emphasis. It would seem that DARD and WREAN accepted this as part of the formal commissioning process with DARD duly authorising payment based on RBT's report.

According to TCIR the commissioning process is a physical check to ensure the turbine is functioning satisfactorily. The commissioning should have verified that the turbine would operate satisfactorily.

In respect of the Jacobs turbines:

- RES commissioned all the Jacobs turbines;
- RES submitted a Certificate of Completion to DARD but this does not state that they commissioned the turbine.
- RES subsequently attended each Jacobs site along with RBT and WREAN when RBT's On Site Inspection and Commissioning Report was being completed. It should be noted that this was in accordance with the

introductory page of RBT's On Site Inspection and Commissioning Report which states that:

*"Renewable Building Technologies have requested to visit each site with the installer to verify the Commissioning of the turbine and ensure that all paper work is in order".*

RBT did not ensure that the installer of the Powerbreeze turbines accompanied them when they were visiting the Powerbreeze sites and completing the On-Site and Commissioning Report.

RBT's On-Site Inspection and Commissioning Report confirmed that:

*"all practical completion details including installation commissioning certificates and test results are in place"*

Despite this appearing in their report RBT advised the Review Team that they did not attend the commissioning of the turbines. All the turbines had been commissioned before RBT and WREAN visited the applicants to complete the On Site and Commissioning of 20kW Wind Turbine Report.

The Review Team consider that RBT should have attended all commissioning and before RBT and the applicant "signed off" the turbines an agreed period of fault free operation (after commissioning) should have existed before the Certificate of Completion and On Site Checklist was submitted to DARD.

A sample of the "On site inspection and Commissioning" report is attached at Annex 13.

RBT's representative and the applicant signed off this report.

This "signing off" acted as a trigger for the release of the grant payment from DARD to the applicant.

The Review Team advised RBT that that some Project applicants stated that their turbines never worked. RBT responded that the turbines were in "working order" before RBT completed their inspection reports. During the Review it was noted that the turbine output meters indicated that only two of the Powerbreeze turbines showed no output, one where the meter is faulty and the other where a meter has not been fitted. However output from some turbines is very small, 1 - 2 kWh, which indicates the turbines, generated for a very short time with the meter connected. RBT advised that, in general, there was pressure to have the turbines signed off so that the grant could be paid.

When the Review Team commented that if the turbines were not generating electricity this should have been acted upon. WREAN advised that they viewed this as an issue between installer and manufacturer. Again, this raises the issues of responsibility and accountability.

## 1.15 AWARDING OF CONTRACTS

Of the 26 successful project applicants, who accepted LoOs, the following Contracts were offered to:

(i) Renewable Energy Services Ltd  
15 x Jacobs 31/20 model

(ii) Adman Ltd Building & Civil Engineering Ltd  
11 x Powerbreeze 20kW model

## 1.16 STATUS OF TURBINES

In summary the turbines are categorised:

- Category 1: Total Failures / Non Repairable. These are the four Powerbreeze turbines, installed by Adman, which shed their blades.
- Category 2: Failed But Repairable. These are 3 of the 15 WERB Jacobs turbines supplied by RES.
- Category 3: Powerbreeze Blades Tied. Adman tied the blades of these five turbines with straps to prevent the blades rotating.
- Category 4: Potential solutions. These are the test turbine modified by the manufacturers and the hybrid arrangement of the original Powerbreeze tower fitted with the running gear of a three phase Jacobs turbine.
- Category 5: 12 Jacobs turbines in Service producing lower than predicted outputs.

An assessment of the condition of each of the turbines supplied under the WERB Project was made and details are contained in Appendix 2 of the TCIR Report.

## 1.17 EETS WIND LTD

In initial discussions with the Review Team EETS advised that it was EETS Wind Ltd who worked with Adman Ltd on this project and EETS Wind Ltd

*“was either wound up or in the process of being wound up”.*

*On the 28 November 08 EETS advised that EETS Wind Ltd would be “struck off” on the 16 December 08 i.e. cease to exist.*

Under the contractual arrangements Adman purchased the Powerbreeze turbines from EETS Wind Ltd and supplied them to the applicants. Consequently, the applicants only had a contract with Adman. As EETS Wind

Ltd is being “struck off” the chain in terms of supply and contractual obligations is broken resulting in no direct link with the manufacturers.

### **1.18 SITING OF TURBINES / HEALTH & SAFETY**

The Review Team recommend that DARD apprise DOE Planning Service and the Health & Safety Executive of the issues that have arisen out of this project and ask that DOE has due regard to this in the development of their Renewable Energy Policy.

### **1.19 CONFIDENCE IN RENEWABLES**

Given UFU's concerns that confidence in the Renewable Energy Sector had been damaged the Review was extended to cover other wind turbines funded under the Rural Development Programme. Following site visits and discussions with these applicants it was concluded that these turbines are operating satisfactorily and there are no material findings for this Report.

### **1.20 WENT WRONG & CAUSES / RECOMMENDATIONS**

The Terms of Reference require an assessment of what went wrong and the causes. An analysis of the problems and the subsequent recommendations are included at section 7. This Report needs to be read in conjunction with the report from TCI Renewables.

### **1.21 KEY RECOMMENDATIONS**

Based on an analysis of the information collated the Review Team recommends:

#### **1. DARD to make an offer of an ex-gratia payment**

Subject to DFP approval, DARD should consider making an offer of an ex-gratia payment to each of the applicants that purchased the Powerbreeze turbines. It should be noted that in such circumstances DARD will be required to present a Business Case to DFP setting out the various options. DFP approval must be secured if any offer is to be made to applicants. In calculating the amount to be offered DARD must consider how the actions of WREAN, RBT, Adman and the applicants contributed to the problems that arose in this project. Any offer should be on the basis that the applicants abandon any claim against the Department arising out of the project.

Subject to the outcome of 1 above DARD should calculate the amount to be offered to the 11 applicants.

## **2. Apportioning Culpability to Stakeholders**

As the Report identifies that a number of parties are culpable for the problems identified in this project DARD should consider if it should seek further legal advice on whether it should pursue a remedy from the other parties to seek recovery of any money DARD pays out.

## **3. Owners of the Jacobs turbines to contact supplier and installer**

In the case of the Jacobs turbines installed by Renewable Energy Services the failed Jacob turbines are capable of being returned to service quickly but for some applicants the cost of repairs is prohibitive because of the low outputs delivered by the turbines. Since the turbines are out of the warranty period unless the applicants can prove that the problem started during the Warranty then the cost of repairs will have to be borne by the owners.

The owners of the Jacobs should contact the supplier and installer to resolve these problems.

## **4. Turbines which failed but are repairable**

**It is recommended that:**

- **The applicant advises the supplier of the damaged turbine, RES and also S Byrne of Frontier Energy (alternative supplier of Jacobs turbines) that notwithstanding the fact that the turbine is outside warranty, in conjunction with the manufacturer a study is undertaken to determine the cause of this failure with the aim of ascertaining the failure mode so as to assess if mitigation work would need to be carried out on remaining turbines to prevent a similar occurrence.**
- **DARD to inform H&SE of the failure of an applicant's turbine under the near miss provisions of RIDDOR regulations;**
- **RES advises all owners of the Jacobs turbines supplied under WERB or other publicly funded schemes that inspection of the drive shaft, couplings and bearing housing bolts is carried out at their next maintenance service.**
- **RES recommends to the applicants with Jacobs turbines that they consider fitting the tower earth bond connections to achieve a minimum resistance of 10ohms to earth (to comply with BS 6651).**

## **5. Value of Powerbreeze scrap metal to built in to any settlement sum**

Any funds received for scrap metal should be built in to any settlement sum agreed between DARD and the Powerbreeze applicants.

## **6. Site specific output estimate to be included in future energy projects.**

It is recommended that a requirement for a site specific output estimate is included in future publicly funded wind energy projects.

## **7. DARD to report to H & SE concerns on ratchet straps**

Five Powerbreeze turbines have been made safe by strapping the blades to prevent rotation. It is recommended that DARD should report this to the H&SE as applicants have expressed concerns about safety. Adman were advised of this and indicated that they would take corrective action. However, they were concerned about liability if they worked on the turbines.

The Review Team has recently discussed this issue with the UFU and Adman and it is understood that Adman will firstly liaise with the UFU and then write to the Powerbreeze applicants requesting permission to remove the turbine heads.

### **1.22 NEXT STEPS**

In the first instance this Report will be forwarded to the DARD Permanent Secretary who commissioned the review for consideration.

The Review Team will also forward a copy of the Report to DARD's Senior Finance Director, Service Delivery Group and Rural Development Division. The Departmental Solicitors Office has considered the Report. The Review Team will continue to liaise with these bodies as required.

On the 11 November 08 the Department informed the Agriculture and Rural Development Committee of the findings of the review in "closed session". A date will be agreed to present the Report to the Committee in "open session", if possible, before the Christmas recess of the Assembly.

Upon consideration of the Report the Permanent Secretary will seek a management response from Rural Development Division as the Implementing Division.

DARD will have to enter into consultation with DFP in respect of preparing a Business Case should DARD consider making ex-gratia payments. DARD will keep its Minister appropriately apprised of developments.

If / when the recommendations of this Report and the accompanying Technical Report are accepted, the Review Team will quality assure the Plan of Action prepared by the relevant parties.



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**2. TERMS OF REFERENCE  
&  
METHODOLOGY**

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## **2. INTRODUCTION**

Kevin Murphy, Head of European Policy Branch, Department of Agriculture and Rural Development (DARD) was requested by Dr Malcolm McKibben, DARD Permanent Secretary, to conduct a Review of the Wind Energy for Rural Businesses (WERB) project.

The purpose of the Review was to adhere to the Terms of Reference and in doing so inform DARD Senior Management of the key issues arising and lessons learnt for the development of future projects.

In September 2003 the Western Regional Energy Agency Network Ltd (WREAN) responded to a call from DARD for sectoral applications and submitted an application to the EU Programme for Building Sustainable Prosperity for a project called Wind Energy for Rural Businesses (WERB).

The aim of the project was to provide financial support to small rural businesses to assist them in meeting their energy costs through the installation of a 20kW wind turbine.

### **2.1 TERMS OF REFERENCE**

DARD's Permanent Secretary presented the Terms of Reference to the Agriculture and Rural Development Committee. Following the receipt of comments the Terms of Reference were amended. The Review Team was to:

- (i) Investigate the roles, specific responsibilities and actions of the Department and all other parties involved;
- (ii) Review what went wrong and the causes;
- (iii) Appoint of a professional engineer to assess the technical aspects of the project, compliance of parties to their associated contract obligations (legal advice will be sought when necessary) and provide advice on whether these turbines can be made operational;
- (iv) Identify potential options to help resolve the situation and the image of renewable energy technologies.

### **2.2 COMPLIANCE WITH THE TERMS OF REFERENCE**

To ensure adherence to the agreed Terms of Reference key elements such as the areas of responsibility, decisions and actions taken, input of the professional engineer (TCI Renewables) have been plotted against the procedures adopted by DARD and it's Agent for the operation of this BSP project. This path has then been scrutinised to identify what went wrong and to identify potential options and subsequent recommendations.

As per the Terms of Reference DARD commissioned TCI Renewables to assess the technical aspects of the project and produce a "stand alone"

Report. A full copy of this Report can be obtained by contacting Kevin Murphy, European Policy Branch, Dundonald House.

## 2.3 METHODOLOGY

The DARD team established to undertake this Review consisted of Kevin Murphy and Paula Hill, European Policy Branch and Hazel Dillon, Customer Service Improvement Branch.

At the outset, DARD's Permanent Secretary and Senior Finance Officer provided direction for the Review.

The team had a number of key research aims:

**Aim 1:** To provide an independent Review of the WERB project and submit a Report to DARD's Permanent Secretary.

**Aim 2:** To determine the process adopted by DARD to administer the project and the roles and responsibilities of the various parties involved in the project e.g. DARD, Western Regional Energy Agency Network, and WREAN's Technical Consultant Renewable Building Technologies Ltd (RBT), ADMAN LTD & Energy Efficiency Testing Services & EETS Wind Ltd, Renewable Energy Services and 26 project applicants.

**Aim 3:** To investigate the relevance/significance of the Clear Skies Registration both in terms of the installer and equipment.

**Aim 4:** To explore the tender procedures and the application of such by stakeholders.

**Aim 5:** To investigate what went wrong and provide recommendations.

**Aim 6:** To consider advice offered to DARD from the Departmental Solicitors Office, Health & Safety Executive, Trading Standards and Central Procurement Division.

## 2.4 KEY TASKS

The key tasks undertaken included:

**Task 1: Appointment of Technical Consultant(s)**

Following a tender exercise DARD appointed TCI Renewables as Consultant Engineers. Their Terms of Reference are attached at **(Annex 1)**

**Task 2: The Team and TCI Renewables undertook desk research to scrutinise the records maintained by Rural Development Division such as:**

- Project files.
- Installer / Turbine Tender Specification (Powerbreeze & Jacobs)
- Turbine Operating & Maintenance Manuals and Owner's training/instructions
- Commissioning / Quality Assurance records.
- Turbine Warranties / Servicing

**Task 3: The Team interviewed and / or consulted staff of Rural Development Division (RDD), Ulster Farmers Union (UFU), Western Regional Energy Agency Network (WREAN), Adman Ltd, Renewable Building Technologies Ltd (RBT), Department for Business Enterprise and Regulatory Reform (BERR), Departmental Solicitors Office (DSO), Health & Safety Executive (H&SE), Energy Equipment Testing Services (EETS), EETS Wind Ltd, Project applicants, Clear Skies, Renewable Energy Services (J A Graham)**

**Task 4: Review & Report:**

To produce a Report based on the desk research and interviews held and to produce recommendations.

In undertaking these key tasks the Review Team undertook a series of site visits and meetings with all 26 applicants. The Review Team also participated in a number of meetings with stakeholders. In addition, the Review Team afforded stakeholders an opportunity to learn of the findings of the draft report before the Final Report was submitted. Reliance has been placed on information provided through the above approach. Comments have been accepted in good faith. However, the Report highlights instances where there is conflicting evidence of events. In some of these instances the Review Team is unable to draw a final conclusion.

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**3. STRATEGIC CONTEXT**

**&**

**BACKGROUND TO**

**THE NORTHERN IRELAND PROGRAMME FOR BUILDING SUSTAINABLE  
PROSPERITY**

**THE WESTERN REGIONAL ENERGY AGENCY NETWORK**

**THE APPLICATION PROCESS**

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### 3. STRATEGIC CONTEXT

In assessing the Wind Energy for Rural Business project it is important to establish the context in which the WREAN application was submitted and approved by DARD. It is evident to the Review Team that at the time the WREAN application was approved evidence existed to merit and warrant DARD's intervention / funding of this renewable energy initiative. It is clear that the project was in line with the aims of wider Government policies such as:

- The Regional Development Strategy for NI 2025 the prevailing principle of which is sustainable development. The strategy attaches great importance to the need to sustain a vibrant rural NI, with a diversified rural economy.
- The draft Department of Enterprise Trade and Industry (DETI) 10 year Energy Strategy with the Minister responsible at that time stating that:

*“Renewable energy produced locally offers the potential to increase business competitiveness and stimulate diversification in rural communities”.*

- The Department of Environment's (DOE) Planning service had updated their planning policy, PSU 12 Renewable Energy. This policy was developed to enable planning to react sympathetically to proposals for single turbines.
- The Rural Development Programme 2001 – 2006 strategy the overall aim of which was:

*“To promote comprehensive and integrated action towards the sustainable and equitable development of rural areas, with a focus on disadvantage, and in doing so, contribute to the economic, environmental, social and cultural well being of the rural community for the benefit of the whole community of Northern Ireland”.*

The guiding principles for implementation of the rural strategy included that it should *“be locally driven, be environmentally sustainable, be innovative in tackling the needs of rural areas, support the maintenance and provision of rural jobs, services and infrastructure and support the work of District Councils and other Government and Agencies in ensuring the maintenance and provision of rural jobs, services and infrastructure”.*

Running in parallel to the RDP were a number of other government initiatives supporting the concept of renewable energy, such initiatives are covered in the independent Economic Appraisal (EA).

DARD has now developed a Renewable Energy Action Plan which seeks to ensure that the schemes and services provided by DARD will enable farmers,

landowners and the wider rural community to capitalise on the opportunities presented by renewable energy

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### **Comment**

The Review Team consider that there is merit in DARD continuing to provide support for renewable energy development as proposed under the Northern Ireland Rural Development Programme (NIRDP) 2007 –2013. This is on condition that they agree registration, accreditation and quality assurance standards with an appropriate independent Certification Body such as the Microgeneration Certificate Scheme (MCS) which is owned and operated by the Department for Business Enterprise and Regulatory Reform (BERR formerly DTI). The relevant body will of course be dictated by the nature of the renewable energy field that is being developed.

At the development stage of any new initiative for wind turbines supported by DARD, consideration should also be given to the recommendations in the Report produced by TCI Renewables (TCIR).

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### **3.1 NORTHERN IRELAND PROGRAMME FOR BUILDING SUSTAINABLE PROSPERITY (BSP)**

The overall aim of Building Sustainable Prosperity (BSP) 2001 – 2006 was to assist a range of projects to develop economic growth, employment, urban and social revitalisation, agriculture, rural development, forestry, fisheries and the environment.

The Department of Finance and Personnel (DFP) was the Managing Authority for all of BSP. Responsibility for Priority 4 “Agriculture, Rural Development, Forestry & Fisheries” was delegated to DARD who also acts as the Paying Authority.

Approximately £39m of the total funding available under Priority 4 was allocated to Rural Development Measures the aim of which was:

*“to diversify, develop and strengthen the rural economy, the rural environment and rural society”*

Funding was allocated to sectoral and area based development projects and programmes because of the recognition that not all of the needs or opportunities of rural areas could be addressed at a very local level. The aim was to provide support for projects and programmes designed to tackle the needs or opportunities of specific sectors. Some 440 diverse and wide-ranging projects received financial assistance under Priority 4. The WERB project accounted for approximately 1.4% of the total funding allocated to BSP Priority 4.

The Department of Finance and Personnel (DFP) delegated to DARD the role of selecting applications for funding. As part of this process DARD was

permitted to appoint, through a competitive process, Implementing Bodies to perform tasks on their behalf in relation to final beneficiaries. They could have been a Government Department, Local Strategy Partnership (LSP) or an Intermediary Funding Body (IFB).

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## **Comment**

The Review Team consider that the funding of the WERB Project met the policy objectives of the BSP Programme.

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Financial assistance was available towards the eligible cost of implementation of a project, up to a maximum of £750,000 at a maximum rate of grant of:

- 75% for non-profit taking organisations; and
- 50% for profit taking organisations.

Administration costs for an IFB was available up to a maximum of 15% of funding sought. Where technical support formed an integral part of an application, it could not exceed 10% of the total funding sought.

In September 2003 Western Regional Energy Agency Network (WREAN) responded to this call for sectoral applications and submitted an application to BSP for a project called Wind Energy for Rural Businesses (WERB). The aim of WREAN's project was to provide financial support to small rural businesses to assist them in meeting their energy costs through the installation of a 20kW wind turbine.

The application was submitted under Measure 4.11:

*“Protection of the Environment in connection with Agriculture, Forestry and Landscape Conservation, as well as the Improvement in Animal Welfare”.*

### **3.2. WREAN**

WREAN was established in 1995 as N.I.'s first local energy agency in order to provide free, impartial and informed energy efficiency advice to householders and small businesses.

In making their application WREAN was applying to act as an Intermediary Funding Body (IFB) to promote renewable energy across N.I. As such WREAN had to demonstrate in their application their technical and managerial competencies to deliver the project. At the time of making their application the following is noted:

- WREAN had been in existence for 8 years, having been established in 1995 as NI's first local energy agency.



The EA stated:

*“We are satisfied that WREAN has sufficient skills and resources to implement and manage the project, with provision having been made for the recruitment of a dedicated Project Advisor, formation of an Assessment Panel comprising representatives from each of the relevant organisations and the procurement of external assistance.”*

At present the WREAN Board remains in existence but there is no staff. To facilitate the closure of the WERB project, the former Project Officer works on an ad-hoc part-time basis for WREAN. When drafting this Report it was anticipated that WREAN would close in October 2008. WREAN advised they have remained in operation due to the problems with the WERB project.

Some funds from the WERB project remain in WREAN’s account. WREAN are currently in negotiations with RBT to settle their account.

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### **Comment**

The Review Team has advised DARD to ensure Contracts are in place to cover WREAN’s continued involvement in the project. DARD has also been advised to settle any outstanding financial issues.

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## **3.3 AIMS AND OBJECTIVES OF THE WERB PROJECT**

The project aimed to protect and enhance the environment and encourage the use of renewable energy technologies by grant aiding (to a maximum of 50%, capped at £15,000) 30 wind turbines to assist with meeting energy costs of rural businesses located across NI.

The objectives included:

- To attract at least 30 applications by 30/6/05
- To ensure rural businesses, including farms, would become more efficient and effective while maintaining and strengthening the regions environmentally friendly image. Rural businesses and the rural population could take advantage of the opportunities provided through new technologies i.e. wind power and new markets through the sale of excess electricity. This created diversification in the rural economy providing income to rural people.
- To have installed and fully commissioned 30 x 20kW, wind turbines by 31/12/06.

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### **Comment**

In respect of the rationale for the project, WREAN advised the Review Team that the application to DARD was demand led. WREAN had received 74 Expressions of Interest from people who appeared to have

some understanding of how a turbine would work for their business. Originally it had been planned to supply a range of turbines but there was no great demand for turbines less than 20kW. Therefore, WREAN's application was restricted to 20kW turbines. After the application was submitted, WREAN did enquire if it would be possible to change their application and offer a higher kW range but DARD advised that this was not possible under a competitive process.

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### **3.4 PROCESS FOR DEVELOPING AND IMPLEMENTING THE WREAN PROJECT**

For ease of reference the following process is outlined in a flow chart at **Annex 2**. The key elements of this process are as follows:

### **3.5 APPLICATION FORM COMPLETED BY WREAN**

WREAN as an applicant had to complete an application for funding the purpose of which was to:

- Obtain details of the applicant organisation and the proposed project and to record these onto DFP's database;
- Obtain details of how the proposed project met the selection criteria specific to the Measure under which the application was made;

### **3.6 COMPOSITION OF SELECTION PANEL**

To assess applications DARD established an Independent Assessment Panel. In accordance with the DFP Structural Funds Operating Manual the Panel, as far as possible, was to:

- Include a representative external to DARD with relevant experience where an open call for applications was issued.
- Be independent of those who may have assisted in developing projects
- Be broadly based, having a range of expertise, reflecting as far as possible the Section 75 groupings
- Have been properly trained to undertake the task.

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#### **Comment**

The Review Team note that DARD's Selection Panel did not have a Terms of Reference detailing their roles and responsibilities and the parameters within which they would operate. It would be considered good practice to ensure future Panels work to agreed Terms of Reference.

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### **3.7 SELECTION PROCESS: STAGE 1**

Each of the applications submitted under the BSP 2003 call were subjected to the same selection process. DARD project staff referred all applications to the Independent Selection Panel for an initial eligibility assessment.

In advance of the applications being submitted to the Panel DARD project staff reviewed the documentation and provided their considerations on the project. It is important to recognise that DARD project staff could not change any application and only the Panel could make decisions on any aspect of the selection process. All decisions made by the Panel were documented against each project. DARD or the Panel did not amend the WREAN application for 30 x 20 kW turbines.

DARD confirmed to the Review Team they had adopted a policy that under a competitive process, material changes could not be made to applications.

### **3.8 ECONOMIC APPRAISAL**

On passing stage 1, DARD subjected eligible applications to an Economic Appraisal (EA), which would have been commensurate with the value of the application. This was to ensure compliance with audit procedures and to promote sound decision-making and proper accountability for all public expenditure, including European Union funds.

Given that WREAN had submitted an application seeking financial assistance of £600,000 the project was subjected to a full Economic Appraisal. In carrying out this level of appraisal all the appraisal stages described in the NI Practical Guide to the Green Book must be followed.

The independent Economic Appraisal on WREAN was commissioned and paid for by DARD. Following a tendering exercise ASM Horwath were appointed.

The final EA was quality assured by DARD's Economic and Statistic Unit who were satisfied that it met the Green Book standards.

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#### **Comment**

The Review Team concludes that some of the key targets as per paragraph 1.23 of the EA were not met e.g. *“each installation to provide at least 75% of the power needs of successful applicants”*.

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### **3.9 SELECTION PROCESS: STAGE 2**

The second stage was to assess applications against Measure Specific criteria. Using agreed scoring criteria the Panel scored each application under a competitive process.

### 3.10 APPROVAL BY DARD'S ASSESSMENT PANEL

Using the Scoring Criteria the WREAN project was approved with the Panel awarding total financial assistance from BSP to WREAN of £600,000. The BSP financial allocation of £600k, under Measure 4.11, was made up of £450k + £90k + £60k. On the assumption that the applicants would contribute 50% towards the costs of the turbines the following funding package was established:

£k	Allocation
450	Project Grant Aid
90	Administration
60	Technical Assistance
450	Applicants Contribution to turbines
<b>1,050,000</b>	<b>Total Project Costs</b>

The actual total eligible costs for all of the 26 turbines purchased under the WERB project were greater than anticipated at £1.124M with the applicants contributing a total of £0.595M representing an overall contribution of 53%. DARD and the Low Carbon Buildings Programme and Clear Skies and NIES contributed the balance of funding. It should be noted that the cost of the individual turbines including installation, cabling etc varied.

### 3.11 CONTRACT FOR FUNDING

On the 9 June 2004 DARD issued a Contract to WREAN “to act as an agent for the Department” to deliver the Wind Energy for Rural Businesses project under the Programme for Building Sustainable Prosperity”.

The aim of the project was to provide and install 30 x 20kW wind turbines during the two years to 30 June 2006.

The Contract was accepted by WREAN on 2 July 2004. The initial contract ran from 9th June 2004 until 30<sup>th</sup> June 2006 but was subsequently extended until 31<sup>st</sup> January 2007. A further extension was not requested until 20 February 2008; it asked for the contract to be extended until 31<sup>st</sup> May 2008 and was granted. Extensions to the Contract were deemed necessary due to problems with the Powerbreeze Turbines.

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#### Comment

The Review Team notes that WREAN continued to operate as DARD's agent in the absence of a formal extension being granted to the Contract. The Review Team has advised DARD to ensure Contracts are in place to cover WREAN's continued involvement in the project.

Upon acceptance of the Contract, WREAN as the Agent assumed daily operational responsibility for the implementation of the approved project. DARD provided Operating Rules to assist in this process.

The Review Team consider that the Contract for Funding should have included more detail on the specific roles and responsibilities of both DARD and WREAN and any work WREAN would sub contract in the implementation / delivery of the Project.

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### 3.12 WREAN'S ASSESSMENT AND TECHNICAL PANEL

The Review Team was advised that this Panel was made up of individuals from Carbon Trust, Foyle Regional Energy Agency, Action Renewables, Belfast Energy Agency, NIE, DETI, Invest NI, Energy Savings Trust, Craigavon Industrial Development Organisation, RBT and WREAN. DARD had observer status.

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#### Comment

The Review Team note that the Assessment and Technical Panel did not have a Terms of Reference. This should have covered things such as their roles and responsibilities, parameters within which they would work, the decision making process they would adopt and the minimum number of members that would form a quorum. This quorum should have been present at every meeting ensuring consistency of approach / application.

The Review Team appreciate that the members of this Panel were voluntary and this perhaps accounted for the sporadic attendance at meetings. This is something that DARD should consider in the delivery of the 2007-2013 Programme when such Panels are being established.

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### 3.13 WREAN'S TECHNICAL CONSULTANT

The Assessment and Technical Panel, assisted by WREAN and DARD, compiled criteria for the appointment of a Technical Consultant.

Advertisements for "Technical Consultancy Services" were placed in the Belfast Telegraph, Irish News and Newsletter. In September 2004 the Chief Executive of WREAN presented to the Panel the outcome the tender competition. WREAN had received 7 tenders and following scoring the highest scoring applicant was Renewable Building Technologies Ltd, which is a subsidiary of the parent company Patrick McCaul Environmental Consulting Engineers. On the 17 October 2004 WREAN issued a letter of appointment to Renewable Building Technologies Ltd, **Annex 3** refers.

The duties of RBT included:

- Preparing the tender paperwork for the supply and installation of the turbines and to manage the tender exercise.
- Assisting with the development of criteria for the selection of proposals to be funded by the project.

- Carrying out a maximum of 80 site visits to potential sites across Northern Ireland
  - Compiling detailed energy analysis and electrical audits on 30 sites.
- 

## **Comment**

The Review Team consider that the Letter of Appointment issued by WREAN to RBT should have had an underpinning Contract. Roles and responsibilities should have been reviewed regularly and particularly at the outset of the revised tender process. RBT consider that at the end of the first tender process they had in fact met the terms of their appointment and should have sought additional payment for any work they carried out for the revised tender exercise. This is an issue to be resolved between RBT and WREAN. RBT advised the Review Team that they did not have a prominent role in the revised tender exercise.

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### **3.14 WREAN'S PROJECT OFFICER APPOINTMENT**

Recommendation 1.54 (g) in the EA stated:

*“an appropriately senior and experienced Project Advisor should be recruited”*

The EA also states:

*“this is an inherently risky project. It involves emerging technology. There is a limited amount of local experience, or expertise in terms of planning, initiating or managing a project of this nature. By definition this is likely to present operational difficulties at a practical level”.*

*“We draw attention to the fact that there is a dearth of experience in managing projects of this nature which makes it all the more difficult to have assurance with regard to WREAN's ability to recruit an appropriately senior and experienced member of staff. In these circumstances, we consider it to be essential that DARD have input in the selection process to ensure that the member of staff appointed is appropriately qualified.”*

DARD advised that WREAN attempted to fill this post by advertising for a Project Advisor. The advert stated:

*“WREAN now seeks to appoint a Senior and Experienced Project Advisor to be responsible for WREAN's delivery, marketing and administration of the Department of Agriculture and Rural Development's Wind Energy for Rural Businesses project”*

WREAN held initial selection interviews but no appointment was made. WREAN's letters of 7 September 04 to unsuccessful applicants stated:

*“WREAN received a limited number of applications in relation to this post; none of which were deemed by the interviewing panel to meet the specific needs of the position”*

WREAN then devised an amended Job Description and re-advertised for a Project Officer as opposed to Project Advisor. The main differences in the two posts were:

- In respect of qualifications and experience the Project Advisor was required to have an energy degree in energy engineering or environmental discipline with at least 6 months project management skills. While the Project Officer was required to be educated to at least A Level standard and have knowledge of the Renewable Energy Sector.
- Under the Project Officer post the person was to work “in consultation with the WREAN Director to plan and deliver all aspects of the Wind Energy for Rural Businesses project”. Whereas the Project Advisor would be responsible for this work.

It should also be noted that that a member of the Selection Panel stated:

*“We looked at the job description and our advice is that the salary is slightly high for what you need is basically a competent administrator. We would recommend putting a greater stress on Admin function and split the role out in categories in the job description.”*

The salary for the Project Officer was set at £13,000 - £14,000.

A DARD representative sat on the Interview Panels in an advisory capacity.

WREAN advertised the post and a Project Officer commenced work on 28<sup>th</sup> October 2004.

DARD advised that while the post was set at a lower level than that recommended in the EA on-going support was available via the Director of WREAN. DARD contends that while the specific requirements of the EA were not met it was felt by RDD and WREAN that the management structure would be sufficient to meet the needs of the project.

On the 11 August 2005 WREAN sought, and obtained DARD’s approval, to second a Technical Officer with experience in renewable energy to work on the WERB project on a temporary part-time basis.

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## **Comment**

As indicated in the Executive Summary at paragraph 1.7 having reviewed the second advert the Review Team considers that the level at which the recruitment of the Project Officer was pitched did not match the specific requirements of the EA and the salary was inadequate to attract a suitably

senior and experienced member of staff. As outlined in the EA this post was pivotal and key to the successful implementation of the project.

A key assumption in the EA regarding the Revenue Costs (page 114) was that “Salary and associated costs” would be £17,500 for the year ended 31 December 2005. It was assumed the Project Advisor would be employed from October 04 to June 06. The Review Team consider this was on the low side yet WREAN further reduced this, advertising the post at £13k - £14k.

By appointing what in essence was an Administrative Officer WREAN diluted the role of the only full time member of staff allocated to the WERB project. Whilst assistance may have been available to the Project Officer the involvement of an appropriately senior and experienced member of staff was not in place.

The Economic Appraisal highlighted risks associated with this project. The Consultants recommendation to appoint a senior and experienced Project Advisor was part of the process required to manage this risk. Whilst the WREAN and DARD considered that the Management Structure was sufficient to meet the needs of the project, given the difficulties with the project, it is evident that it was not. The Review Team consider that WREAN placed too much reliance on the Project Officer who carried out more than the administrative role that WREAN had recruited this officer to do. WREAN should have provided more direction and guidance to the Project Officer.

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### **3.15 WREAN’S CALL FOR APPLICATIONS**

In November 2004, WREAN acting as DARD’s agent issued a call, under a competitive process, for applications. In their public facing documentation the following appeared:

*“The Wind Energy for Rural Business project will provide financial support (50% up to a maximum of £15,000) to rural businesses (which includes farmers) to assist them in meeting their energy costs by utilisation of wind power through the installation of 30 x 20kW wind turbines across rural N.I. The additional cost will be met by the rural business themselves”*

The closing date for applications was “no later than 5pm on Friday 14 January 2005”.

WREAN held information workshops to provide generic guidance to potential project applicants on the completion of their WERB applications.



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**Comment**

The Review Team considers that these workshops were a useful tool to aid the application process.

It should be noted that £15,000 was the maximum that could be offered to any applicant. The Letter of Offer stated at paragraph 5 (III):

*“The limit of costs (£30,000) eligible for grant assistance and the rate of support (50%) being revisited on the completion of the turbine and installation services procedures. Any reduction in the unit costs (below £30,000) achieved will result in an equal reduction in the amount and hence rate of grant to be paid. For example, a reduction in the unit cost from £30,000 to £25,000 will result in a reduction in the grant from £15,000 (50%) to £10,000 (40%)”.*

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In total 64 Part A & B application forms were submitted to WREAN.

In completing the Part A & B the onus rested with the applicant to set out their relevant expertise, experience and ability to successfully deliver the proposed project.

On the 12 October 2004 RBT, WREAN and DARD agreed the criteria for the selection of project applicants.

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**Comment**

It is unclear to the Review Team if the criteria for selecting applicants were submitted to the Assessment and Technical Panel for ratification or if it had been agreed that this should happen. DARD must ensure that where any type of Panel is established e.g. Selection, Technical or Advisory, its roles and responsibilities are clearly set out and agreed at the outset and that these are then adhered to.

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To select project applicants WREAN established a 4-person selection panel, from members of the Assessment and Technical Panel, to apply the selection criteria and approve applications for funding. This Panel was representative of the Renewable Energy sector.

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**Comment**

The Review Team note that WREAN’s Selection Panel did not have Terms of Reference, which would be considered good practice.

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Upon receipt of applications WREAN:

- Acknowledged receipt and checked Parts A & B were fully completed,
- Completed an eligibility assessment which they submitted, via DARD, to the WREAN Board,
- On 11 March 2005 the 64 eligibility assessments were presented to the WREAN Board for ratification. 50 applications were confirmed by the Board to be eligible with 14 deemed ineligible.
- Each eligible application was subjected to an Economic Appraisal completed by WREAN, a sample of which were submitted to DARD's Economic and Statistics Unit for quality assurance,
- On 25 May 2005 the Selection Panel scored the 50 applications and approved 30 applications for funding, entered 6 on to a reserve list and rejected 14. From the 36 applications that scored above the threshold DARD, on WREAN's recommendation, issued 30 Letters of Offer. Some of these then withdrew and were replaced by applicants from the reserve list. Subsequently 26 of the 36 applications deemed successful proceeded to implement their project. Reasons for withdrawal were:
  - 2 due to refusal of planning permission,
  - 5 due to promoters deciding they needed a larger turbine,
  - 2 due to the increase in project costs,
  - 1 due to investment in another business venture.

On 3 June 2005 the Selection Panel's decisions were submitted to the WREAN Board for ratification. The Board approved the decisions and highlighted the importance for those successful applicants:

- i. To be fully aware that a 20kW wind turbine produces on average some 33% of its rated power and;
- ii. Wind speeds of individual sites should be monitored to ensure that the project would be viable on this site.

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### **Comment**

The Review Team is very concerned to note that the considerations of the WREAN Board were not communicated by WREAN to DARD for inclusion in the Letter of Offer. These comments may have influenced the applicants' decisions on whether to proceed with the project. Applicants were basing their decisions on the predictions provided by WREAN's Technical Consultant, RBT. The Review Team is concerned to see that RBT did not discount its predictions. RBT advised the Review Team that they based its predictions on manufacturer's figures and applicant's electrical tariffs. RBT advised the

Review Team that it had no rationale to substantiate any such variance. However, TCIR advised that in the renewable energy business it is widely recognised, that manufacturers figures may be over inflated or at very least based on optimum site conditions, which is rarely achievable.

Therefore the Review Team would have expected to see some variables being included in RBT's calculations. This is particularly important given that wind speeds were not site specific. It is considered that this would have assisted applicants make more informed decisions.

During the review output data were collected from the Jacobs turbines and the average power equated to 8.2% with a range of 4.5% to 13.8% and compared with the estimates prepared for the economic appraisals the actual output at best was 50% and at worst 14% of that estimated. It should be noted that an effective wind measurement survey for turbines of this size could cost approximately £20k for hire of a mast for one year and data collection and analysis. However, TCRI advised that an experienced consultant or supplier should be able to use public databases and site survey to give a realistic estimate output.

DARD confirmed that RBT did provide technical information for use by WREAN in the drafting of PPE's. WREAN with assistance from DARD completed the PPEs at circa 6 and 18 months as required under the EA. In addition, DARD had commenced work on a PPE for the overall WERB project.

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### 3.16 ISSUE OF LETTERS OF OFFER

Between July 05 and January 06 DARD issued Letters of Offer to the successful applicants. A list of successful applicants is included at **Annex 4**.

A sample LOO is attached at **Annex 5**. The LoO contained:

- Pre-conditions, which the applicant had to meet within three months of the Letter of offer.
- Conditions including a date for completion of the project.

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#### Comment

As the working relationship between DARD and WREAN was not clearly defined it is unclear to the Review Team who accepted ultimate responsibility for ensuring that applicants understood the terms and conditions of their Letters of Offer.

It would appear that WREAN's Project Officer verbally explained the pre-conditions and conditions of the Letters of Offer to some of the applicants but there was no formal record of this having taken place. It would have been good practice to explain (in advance of acceptance by the applicant) the LoO to the applicant and record that such discussions took place. This would have

ensured that applicants understood what they were “signing up to”. In addition, applicants should not have accepted LoOs without fully considering the terms and conditions.

The Review Team consider that the process adapted for the issue of the Letters of Offer led to some confusion. On WREAN’s recommendations DARD issued the LoOs but it was WREAN’s responsibility to explain the content of the LoO to applicants. Applicants then returned the Form of Acceptance to WREAN. Responsibility for explaining the content of an offer and any associated covering letter should, in future, be clearly established at the outset of a regeneration programme.

The Review Team would recommend that DARD consider this in the delivery of the new NIRDP.

Between July 05 and January 06 DARD issued Letters of Offer (LoOs) to the successful applicants. In a covering letter attached to the LoOs DARD stated:

- *“The pre-conditions stated on the Letter of Offer should be satisfied as soon as possible and at the latest 3 months from the date of this letter. If you are in any doubt regarding these or any other terms of the offer, I suggest that you discuss the matter with you legal representative.*
- *I would also advise that you should consider appointing a suitably qualified professional in the development of your project.*
- *If you require further clarification on the terms of the attached letter of Offer, please do not hesitate to contact me”.*

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### **Comment**

DARD advised that the above bullet point about professional advice was inserted to avoid a potential conflict of interest in respect of the role of RBT who were employed by WREAN. RBT was required to carry out the duties listed in its letter of appointment, which did not include providing on-going direct advice to applicants.

None of the project applicants sought professional advice but stated they placed reliance on DARD’s involvement as a Government Department, WREAN and the appointed consultants RBT Ltd.

The Review Team considers that on accepting the LoO the WERB applicants should have assumed greater ownership and responsibility for the project funded under BSP.

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### **3.17 ACCEPTANCE OF LETTER OF OFFER**

Upon acceptance of the Letter of Offer the applicant accepts responsibility, under the terms and conditions, of the Letter of Offer, for the development and implementation of the project, which is located on their property.

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**Comment**

The Review Team considers that where an applicant accepts a Letter of Offer they are accepting full responsibility for the delivery of the project and they are indicating that they understand the conditions upon which the offer is made.

The Review Team considers that on accepting the LoO the WERB applicants should have assumed greater ownership and responsibility for the project funded under BSP.

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**3.18 Covering Letter issued with Letters of Offer**

As referred to in paragraph 3.16 DARD issued a covering letter with all the LoOs and this included a paragraph, which stated:

*"I would also advise that you should consider appointing a suitably qualified professional in the development of your project."*

DARD highlighted that the inclusion of this paragraph in the covering letter was unique to the WERB applicants. DARD considered that applicants needed their own professional advice to avoid a potential conflict of interest. However, applicants chose not to follow this advice.

At a meeting with the Review Team an applicant advised that he discussed this paragraph with WREAN and RBT and was advised not to concern himself. It was suggested to him that he would have difficulty securing independent professional advice and in any event WREAN and RBT were there to assist him. The inference being that he did not need to pursue this.

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**Comment**

The Review Team is aware that applicants relied on the information given to them by WREAN and RBT. In the applicant's opinion this negated the need for additional advice at a cost to them.

The Review Team considers there was a perception amongst applicants that the information provided by RBT and WREAN was the advice of DARD, which was not the case.

It would seem that WREAN and RBT did not appreciate the significance or the reason for the insertion of this paragraph and on being questioned by applicants about it they should have sought clarification from DARD.

The Review Team considers that confusion arose because on WREAN's recommendations DARD issued the LoOs but it was WREAN's responsibility to explain the content of the LoO to applicants.

### **3.19 ROLES AND RESPONSIBILITIES**

The Review Team is concerned that there was an apparent lack of clarity in the roles and responsibilities to be carried out by the stakeholders involved in the delivery of the project. From desk research the Review Team has drawn up an indicative list of the functions that each carried out.

#### **DARD undertook the following:**

- Paying Authority.
- Issuing an Open Call for applications to BSP
- Establishing an Independent Selection Panel to assess and score applications.
- Project staff reviewed the applications submitted to DARD's Selection Panel.
- Commissioned an independent Economic Appraisal (EA).
- Economics and Statistics Unit (ESU) quality assured the EA in terms of meeting Green Book Standards.
- Provided administrative support for the Selection Panel.
- Issued the Contract for funding and monitored WREAN's performance.
- Checked the applications submitted to WREAN to ensure adherence to BSP objectives.
- Sat as observers on the Assessment and Technical Panel and attended sub-meetings.
- Carried out monthly monitoring meetings,
- Involved in the appointment of WREAN's Project Officer as an observer.
- Received the EAs prepared by WREAN/s Project Officer on eligible applications and arranged for ESU to undertake a sample check of the EAs.
- Issued Letters of Offer to applicants.
- At the payment stage checked to ensure the pre-conditions of the Letters of Offer were met.
- Liaised with WREAN and RBT.
- Ensured public procurement rules were followed.
- Approved the tender process and the use of a sample tender pack that was to be issued to applicants as an aid.
- Arranged payments to applicants when supporting documentation justifying payment was submitted by WREAN and RBT.
- Completion of PPEs

#### **As DARD's Agent / IFB WREAN undertook the following Roles and Responsibilities**

- Applicant to BSP.
- Accepting the Contract from DARD to act as an agent.
- Implementation of DARD's Operating Rules
- Direct contact with applicants on operational issues.
- Establishment of an Assessment and Technical Panel.

- Appointing the Technical Consultant (Renewable Building Technologies)
- Appointing the Project Officer.
- Issuing open call for applications for the WERB project under a competitive process.
- Establishing a Selection Panel to select applicants.
- Checking eligibility of applicants.
- Completing EAs on eligible applications, referring copies to DARD.
- Scoring eligible applications by the WREAN Assessment Panel and submitting to the WREAN Board for approval.
- Ensuring the applicant met the terms and conditions of the Letter of Offer.
- Per the DARD Contract “funding was conditional upon effective tendering and procurement procedures being put in place regarding technical assistance, turbines and installation.”
- Developing scoring criteria for use by applicants.
- Provision of sample tender pack to all applicants.
- Visiting applicants to oversee the opening of tenders
- Assessing tender documents with project promoters.
- Monitoring project implementation.
- Acceptance of claims for payment of grant.
- Ensuring supporting documents for payments were in order before submitting to DARD.

**As WREAN’s Technical Consultant RBT were, according to their Letter of Appointment, to:**

- Prepare the tender paperwork for the supply and installation of the turbines and to manage the tender exercise.
- Assist with the development of criteria for the selection of proposals to be funded by the project;
- Carry out a maximum of eighty site visits to potential sites across NI,
- Compile detailed energy analysis and electrical audits on thirty sites.
- Supply and install meters for monitoring electrical usage on thirty sites.
- Assist applicants with all matters relating to statutory bodies.
- Provision of Technical Drawings.
- Provision of reports on activities and progress as required.
- Post Project Evaluation – Carry out a formal evaluation of the turbine installation phase six months after completion and a final evaluation of turbine operation eighteen months following completion.

In addition RBT:

- Assessed tender documents under the initial tender process.
- Provided and agreed the content of the sample tender pack to be issued to applicants.
- Completion of RBT’s documentation called the “On-Site Inspection and Commissioning of 20kW Wind Turbine ” report.

- Confirmed that all practical completion details including installation, commissioning certificates and test results are in place.

### **The role and responsibilities of the Applicant**

- Applicant to WERB project.
- Accept the Letter of Offer (LoO) and the terms and conditions therein.
- Meeting the terms and conditions of the LoO.
- Undertaking the tender exercise.
- Using Scoring Selection Criteria to score the tenders.
- Accepting the lowest tender or seeking DARD approval to accept the higher tender.
- Awarding the Contract to the successful Installer.
- Issuing letter of rejection to the unsuccessful Installer.
- Signing off RBT's documentation called the "On-Site Inspection and Commissioning of 20kw Wind Turbine".
- Paying for the turbine
- Submitting claim for payments.

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### **Comment**

The Review Team considers that the roles and responsibilities of those involved in the delivery and implementation of the project were not set out sufficiently clearly at the outset of the project. As the project developed and was subjected to changes, roles and responsibilities should have been revisited and clarified. Responsibility for this rested primarily with DARD and WREAN to ensure more effective control of the project.

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### **3.20 PROCUREMENT**

DARD has responsibility for ensuring that public procurement procedures are applied to projects supported under the Rural Development Programme.

Given that the WERB project involved emerging technology and the quantitative analysis within the Economic Appraisal highlighted the sensitivity to input cost variation (the cost of turbines etc) the Economic Appraisal at paragraph 1.53 (c) stated:

*"It is essential that effective procurement systems are established and that appropriate support, service and maintenance arrangements are established at the outset.*

This condition was included in the Contract for funding to WREAN which stated that funding was conditional on effective tendering and procurement procedures being put in place regarding technical assistance, turbines and installation services.



In view of the importance of the tendering process when selecting their Technical Consultant, WREAN stated in their advertisement that the responsibilities of Technical Consultants would include:

- Prepare the tender paperwork for the supply and installation of the turbines and to manage the tender exercise.
- Assist with the development of criteria for the selection of proposals to be funded by the project.

The tendering process became complicated because two attempts were made to implement procedures, which satisfied the requirements of DARD.

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### **Comment**

The Review Team consider that the two approaches applied to tendering exacerbated any confusion there may have been over roles and responsibilities and may have led to some essential detail being removed in the second tender exercise e.g. Clear Skies registration.

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### **3.21 INITIAL TENDER PROCESS**

On the 20 September 2004 as part of this process WREAN's Assessment and Technical Panel, DARD and RBT met to agree the tender and selection procedure to be used for the selection of suppliers/installers/equipment. The Panel agreed that the Technical Consultant would source a list of 20 kW Wind Turbines available on the market. The minutes stated:

*"only installers currently on the Clear Skies list will be able to apply for tender to install / supply turbines".*

RBT advised that the aim was to appoint one installer / supplier for all project applicants thus delivering economies of scale.

On the 24 September 2004 RBT sought Expressions of Interest from installers on the Clear Skies list. Hence the Clear Skies list became a prominent issue in the WERB project. Five other small-scale wind turbine manufactures from Holland, Scotland, France, Australia and U.S.A were also contacted.

RBT advised the Review Team that it focused on Clear Skies as a key criterion as this would subsequently permit successful project applicants to apply for additional grant aid under the Clear Skies programme.

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## Comment

The Review Team note that:

- Applicants that opted for the Powerbreeze turbine received £15k from DARD and an additional £5K from the Low Carbon Buildings Programme, which was administered by the Energy Saving Trust.
- Applicants that opted for the Jacobs turbines received £5k from the Clear Skies programme and £1k from NIE.

Both of these programmes deemed businesses ineligible for grant support. Only private domestic householders or not-for-profit community organisations were eligible. This is outside the scope of the review but DARD should bring this to the attention of BERR. It is recognised that many of the premises had electricity meters supplying the farm business and dwelling house.

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On 12 October 2004 DARD and WREAN agreed the content of the Technical Consultants tender documents and the process.

Four companies returned tenders:

- Renewable Energy Services
- Steve Lang, Westwind Ltd, Cork
- Ian Postlewait, Agrilek Ltd, Cumbria
- Guillame Chapuy, Vergnet, France

On 22 October 2004 RBT, WREAN and DARD opened the tender documents. RBT advised that only the tenders submitted by Renewable Energy Services and Agrilek “*were correctly completed with the “Analysis of Tender” filled in fully and accurately*”.

On the 26 October 04 the Assessment and Technical Panel was subsequently advised that only 2 companies had returned fully completed tender documents and that Renewable Energy Services had scored the highest. The Panel considered that Renewable Energy Services, agent for the Jacobs turbine, was the most favourable tender. However, the Panel had concerns regarding the cost of the turbines and Renewable Energy Service’s ability to deliver and install 30 x 20kW within the stipulated timescales. RBT were to arrange further discussions with Renewable Energy Services to clarify these matters.

As a follow up to the Assessment and Technical meeting RBT prepared a Tender Report, a draft of this was submitted to DARD for consideration.

On considering the draft Tender Report DARD had a number of concerns. Therefore, on the 1 November 2004 DARD expressed their uneasiness as to

the tender process adapted thus far. DARD considered that the process was flawed because:

- *“Given the value of the Contract it was over the European threshold of £96K the Contract should have been advertised in Europe which would not seem to have been the case.”*
- *Any tenders that were sought were only via placement of an ad on one website.*
- *There appeared to have been significant negotiations with the single bid that was received and they surmised that the specification following negotiation would have been significantly different from the one contained in the original tender document.”*

Therefore advice was sought from DFP’s Government Purchasing Agency (GPA). Pending the outcome of these enquiries DARD advised that no appointment of any installer / supplier was to be made without DARD’s prior approval.

Having sought GPA’s advice, GPA shared DARD’s concerns and GPA advised that the tender exercise should be abandoned.

As a result GPA advised that WREAN should move forward with a public tendering process to be undertaken by each of the project applicants.

In respect of bullet point 3 above RBT advised the Review Team that it did not re-negotiate the single tender bid. Any discussions that it may have had with the single tenderer would have been by way of seeking clarification, which is acceptable under the tendering process.

### **3.22 DISCUSSION ON REVISED TENDERING PROCESS**

On 3 February 2005 the revised tendering process was discussed at the Assessment and Technical Panel where the minutes record that WREAN’s Project Officer confirmed that a decision had been reached on tendering. The Project Officer stated:

- *“that following discussions with Central Procurement Division the decision was made, in consultation with DARD, to allow a public tendering process for Project applicants.*
- *RBT and WREAN’s Project Officer would both provide on-going assistance including a specification and an example advertisement required for the tendering process.*
- *that a number of potential project applicants had requested that they as individuals select the make of turbine and installer to ensure the renewable technology would sufficiently meet their needs. WREAN advised that the public tendering process would allow this”.*

### 3.23 REVISED TENDER PROCEDURE

On 18 July 2005 DARD contacted WREAN advising that they should contact RBT immediately to ascertain if it had drawn up the appropriate tender documents and full specification. The importance of this was that applicants would require these very shortly.

After contacting RBT, WREAN advised DARD that RBT:

*“saw no problem getting together the tendering details and specification”*

but would like a meeting to agree these before issue to the successful applicants.

Therefore, a meeting was convened on 22 July 2005, attended by WREAN, DARD and RBT, the key points arising from this were:

- i. WREAN would prepare a “main tender advert” notifying interested parties that the 30 successful project applicants to the WERB project will shortly be tendering for the supply and erection of a 20kW Wind Turbine.
- ii. The main tender advert to be e-mailed to all members of the Assessment and Technical Panel.
- iii. Agreed the format of the individual tendering advert and agreed the process under which project applicants would place the adverts in the Belfast Telegraph.
- iv. All agreed changes to the individual advert were to be updated by WREAN and final draft forwarded to DARD for approval.
- v. WREAN to forward individual tender documents to successful project applicants.
- vi. Should individual project applicants have any questions regarding the tendering process they were to be referred to RBT.
- vii. In using the Scoring Selection Criteria the successful applicant must document why they have chosen the installers using the categories listed.

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#### **Comment**

While the applicant was being requested to run the tender process there remained considerable input and control from DARD, WREAN and RBT as they established the processes and WREAN facilitated the completion of the Selection Scoring Criteria.

The Review Team consider that given the complexity of the tendering process and the apparent confusion over the “sample tender documents” WREAN should have adapted a similar proactive approach, as it did at the application stage, and offered workshops to applicants to take them through the tender process and reduce potential risks.

Although the tender pack was a sample the Review Team consider that given the technical nature of its content WREAN should have submitted the final sample tender pack to RBT and the Assessment and Technical Panel for ratification.

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### 3.24 DARD'S CONCERNS ON THE TENDERING PROCESS

On reviewing what had been agreed at the meeting on 22 July 2005, DARD on 26 and 28 July 2005 raised concerns with WREAN that:

- WREAN was instructing project applicants on what exactly should be in their tender documents.
- It appeared that WREAN was taking on a professional role and as such they could have liabilities should things go wrong.
- WREAN needed "to be careful it is not seen to be carrying out the tendering for the applicants".
- The tender document given to applicants should be marked "sample" and should only be provided by way of a sample if asked for by applicants to aid them with the tendering exercise.
- The pack to be clearly marked "sample" and WREAN should again advise applicants to take their own professional advice and should include a disclaimer when issuing the documents.
- DARD instructed WREAN "*project applicants should be advised that they must also ensure Annex G attached to the Letter Of offer is adhered to and reminded that they should take their own professional advice.*"

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#### Comment

The Review Team notes that despite the advice provided by DARD, WREAN:

- Proceeded to issue a sample pack to all applicants;
- On issuing this to applicants WREAN used a covering letter in which WREAN should have taken the opportunity to again highlight the need for professional advice.
- WREAN advised applicants that they could not open the tenders until WREAN was present. This suggests that WREAN's role went beyond facilitation.

The Review Team conclude that there was considerable confusion throughout the tendering process as there did not seem to be a lead organisation taking full responsibility for this.

This confusion is further exacerbated because in a meeting with the Review Team, RBT advised that it was made clear to them that they could not get involved in the second tender process because of a potential Conflict of Interest. RBT advised that they provided WREAN with sample tender

documents, which stated that the installer and equipment should have been on the Clear Skies List. RBT added that they were unaware that WREAN had removed this requirement from the sample tender pack issued to applicants and the rationale for doing this.

Despite RBT's perceived position it is noted that at a meeting on 22 July 2005, which RBT requested be held to agree the content of the tender pack, the minutes state that should individual project applicants have any questions regarding the tendering process they were to be referred to RBT.

As the content of the tender pack was agreed at this meeting the Review Team is unclear why WREAN would have taken it upon themselves to subsequently change the content of the tender pack e.g. removal of the mandatory Clear Skies accreditation.

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### **Comment**

The Review Team feels that despite a potential Conflict of Interest as identified by DARD, RBT could and should have been involved in all stages of the revised tender process. RBT's letter of appointment from WREAN clearly states that part of their roles and responsibilities included the preparation of the tender paperwork for the supply and installation of the turbines and to manage the tender exercise. There was a clear need for technical advice and support from RBT in the second tender process.

While DARD and GPA advised that the first tender exercise should be abandoned RBT advised the Review Team that:

- They consider they met the terms and conditions of their appointment by completing the first tender exercise and selecting RES as the favoured installer/supplier,
- They had completed 90% of the work attributed to them.
- If they were to be fully involved in the second tender exercise there should have been a re-negotiation of their appointment and a revision to their fee.

As stated above, given that the first tender exercise was abandoned the Review Team considers that the "ownership" in terms of management of the tender exercise should have been clearly established, managed and monitored by DARD and WREAN at the start of the revised tender exercise,

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### **3.25 MAIN TENDER ADVERTISEMENT PLACE BY WREAN**

As referred to at 3.23 above on 5 August 2005 WREAN placed the main advert in the Belfast Telegraph, Irish News and News Letter **Annex 6**. Within the advert WREAN advised that should potential contractors require information on the project they should contact WREAN.

WREAN confirmed to the Review Team that when contacted by potential tenderers they only provided information on the nature of the WERB project. The primary purpose of the main advert by WREAN was to provide advance notice and reduce the overall advertising costs incurred by Project applicants.

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### **Comment**

The first paragraph above continues to place WREAN directly in to the tender exercise while the second paragraph indicates the limited role they saw for themselves. The Review Team considers that this led to further confusion for project applicants.

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In response to this advert WREAN advised the following companies sought information on the WERB project.

- Renewable Energy Services, Antrim
- Adman Ltd , Carrickmore
- Barrett Electrical Contractors, Omagh
- Protean Project Management Ltd, Moira
- Donald McDougall, Co Mayo
- Dunlop Electrical Services, Dunloy
- Image Technology, Belfast
- Patrick Farfan Association Ltd, Dundonald.

In due course the individual project applicants placed adverts in the Belfast Telegraph seeking Tender Fee Proposals from suppliers **Annex 7**.

Suppliers / installers responded to this advert by requesting the grant applicant to provide further details. All project applicants used the sample pro-forma tender documents issued by WREAN i.e.

- TENDER PACKAGE
- SCOPE OF WORKS
- SCHEDULE OF EQUIPMENT
- ANALYSIS OF TENDER

An example of these documents is attached at **Annex 8**.

DARD advised that the sample “Tender Package” should include the following Disclaimer:

<p><b>Disclaimer</b> – WREAN accept no responsibility for the information enclosed within this document, therefore the content is not given or endorsed by WREAN or any other third party unless otherwise notified by its duly authorised representative independent of this message.</p>
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**Comment** – The Review Team considers WREAN should have explained the importance of the tendering process to each applicant.

None of the tender documents issued included site-specific information.

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WREAN advised that the covering letter issued to Project applicants along with the sample tender pack advised applicants to “add to them to suit their own specific needs.”

In meeting the Review Team WREAN advised:

- the opportunity was there for Project applicants to change the tender sample
- WREAN issued generic information.
- WREAN did not take on any responsibilities as regard site-specific detail.

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**Comment**

By providing sample documents the Review Team accept that this was well intentioned. However, the Review Team’s experience would suggest that in presenting such samples to applicants there is a tendency for applicants to accept these without question. WREAN advised the applicants that the information contained in the sample was the minimum required but it has transpired the information contained within the sample pack had not, given the context in which it was developed and issued, been sufficiently quality assured by DARD, WREAN and RBT. For example, it did not make it mandatory for the installer/supplier to have full registration on the Clear Skies list nor did the turbine have to be registered on the Clear Skies list. Reliance on the Clear Skies list would have reduced some of the problems that have arisen on this project.

In providing a sample the Review Team considers that there was an onus on WREAN and RBT to ensure that the content of it was quality assured.

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### **3.26 RECEIPT OF TENDERS**

Only two companies responded to all 26 adverts placed by the project applicants i.e. Adman Ltd and Renewable Energy Services.

WREAN advised project applicants not to open the tender documents until they were present. WREAN staff visited each applicant to provide guidance on the scoring of tenders using the pro-forma “Scoring of Selection Criteria”. The categories included in the scoring criteria provided by WREAN relate directly to the sample Tender Package.



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## Comment

The Review Team consider that once again WREAN had taken partial control of the tender process by insisting they were present at the opening and scoring of tenders. In addition, if applicants had amended the Tender Package it would have meant that the scoring criteria would also have to be amended. This was never the case as all applicants accepted the information provided by WREAN.

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### 3.27 SCORING OF TENDER PROPOSALS

The Grant applicant used the Scoring Selection Criteria to score each tender. It was envisaged that each individual applicant would be responsible for scoring their own tenders, however, after examining the project files and speaking to the project applicants it appears that all of the scoring sheets were actually completed by WREAN with many of the “Notes” simply replicated from one applicant’s sheet to another.

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## Comment

WREAN was in partial control of this element of the project as the Scoring Selection Criteria related directly to the sample tender pack.

Each applicant as would have been expected did not sign off the Scoring of Selection Criteria. Comments have been replicated which indicated each applicant did not insert the “Notes”. The Review Team regard this as inappropriate practice and WREAN should have briefed their staff on their responsibilities before the Scoring of tenders was undertaken on the applicant’s premises.

The tenderers had been asked to provide estimates of output at an average 7m/s at 25m above ground level. Using this criterion all tender returns for Jacobs and Powerbreeze turbines returned the same figures. This means that this scoring criterion never changed for any site despite the fact that each site would have different typography and average wind speeds. The two turbine types submitted had different power characteristics and only one site of the 26 had an average wind speed of 7m/s. The use of a standard wind speed will not have given an applicant a site-specific estimate of the potential output from each turbine type.

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As can be seen in **Annex 9** the Selection Criteria covers a number of points. Key issues and an analysis of how these were addressed are as follows:

## Cost

A maximum of 20 points was awarded to the contractor (supplier) with the lowest tender price.

Annex G of the LoO, which details the tendering procedures states that “where the lowest tender has not been accepted by a grant applicant, DARD’s approval must be sought before awarding the contract.” Six of the project applicants chose the Powerbreeze model despite the fact that it was not the lowest tender. There is no evidence of DARD’s approval being sought by the applicant or WREAN.

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### **Comment**

This appears to have been an administrative oversight by

- (i) The applicant not adhering to the terms and conditions of the Letter Of offer at paragraph 22 of Annex G and requesting DARD’s approval.
- (ii) WREAN not advising the applicant to request DARD’s approval.

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During site visits the Project applicants provided explanations such as:

- The Powerbreeze turbine produced a greater output based on predictions provided by RBT.
- The applicant was influenced by WREAN and RBT to opt for the Powerbreeze model.

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### **Comment**

The Review Team has concerns about the accuracy of predictions; this is explained further in the TCI Renewables (TCIR) Report.

The Review Team has not been presented with tangible evidence to verify the influence that may or may not have been exerted. Both RBT and WREAN refute that they influenced applicants’ selection.

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### **History of Company**

Under this criterion the contractor had to demonstrate extensive experience in Project Management and Construction. Experience in Renewable Projects was graded highest, though experience within the Construction sector was also awarded points.

Despite the fact that Adman Ltd was only established in January 2005, the tender submitted by Adman Ltd was awarded the maximum 5 points.

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## Comment

The fact that all applicants selecting the Powerbreeze awarded the same marks to Adman Ltd suggests to the Review Team that WREAN's role was greater than that of facilitation.

This demonstrates that reliance was placed on the role of EETS Ltd as opposed to Adman Ltd who submitted the actual tender.

From the file review and discussions with WREAN it is evident that WREAN assumed there was a formal partnership agreement between Adman Ltd and EETS Ltd or Adman and EETS Wind Ltd. However, when the Review Team requested a copy of the Partnership Agreement to define roles and responsibilities it transpired that no such agreement exists. Adman Ltd tendered to:

*“Adman Ltd Building & Civil Engineering Ltd, through our partnership with EETS Ltd, are pleased to offer the supply and installation of the 20kW Powerbreeze Wind Turbine. The POWERBREEZE is suitable for both single and three phase applications and is mounted on a 25m high steel monopole.*

*EETS will provide the turbine supply, accreditation, installation supervision, and commissioning and technical support. Adman Ltd will be the local representative of EETS and will supply civil engineering services, turbine erection, electrical connections, maintenance and servicing and whole project management”.*

*“Our collaboration with EETS offers the expertise of an internationally recognised renewable energy company together with the experience and accessibility of a local company”.*

Adman Ltd's tender document states they were formed in January 2005. In addition EETS advised the Review Team that the turbines were being supplied by EETS Wind Ltd, which was only formed in 2005 and had never installed the Powerbreeze turbine previously.

This is a major oversight in the operation of this scheme in that WREAN did not deem it prudent to advise applicants to robustly check the status of the partnership as part of the Selection Scoring Criteria.

The Review Team consider the statement from Adman Ltd:

*“Adman Ltd Building & Civil Engineering Ltd, through our partnership with EETS Ltd...”*

is ambiguous and was misinterpreted by WREAN and the applicant. In addition, EETS Wind Ltd advised the Review Team that Adman were fully aware that they were contracting with a newly formed company and not EETS Ltd. Why Adman attached an EETS brochure with their tender document and

referred to EETS Ltd as opposed to EETS Wind is unknown. However what is clear is that by doing so the catalyst for Adman's acceptance in to the project was created.

The Review Team note that the letters of appointment issued by the applicants were addressed solely to Adman Ltd and not Adman Ltd & EETS Ltd or Adman and EETS Wind Ltd. If there had been a formal written agreement between Adman and EETS Wind and if the applicants had entered into a contract with both parties then the supply link back to the manufacturer would have been much stronger.

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## Quality of Product

The Tender Package under the "Quality of Product" category states "Products shall have been designed in observance of BS EN 61400-2 1996 (or updated version), equivalent national standards such as Germanischer Lloyd rules and regulations **or** shall have a proven track record of reasonable reliability and a good number of operating wind turbines in the Europe. Inverters must comply with G59".

The Powerbreeze turbine was awarded the maximum 5 points stating that it was designed in observance of BS EN 61400-2 1996 as it has the International Standard of IEC 61400-2 and that the inverter complies with G59.

Adman Ltd stated in their tender that:

*"The product had been designed to meet Chinese national standards which are in general accordance with IEC 61400-2".*

*"This first example of this particular model has been installed over 4 years ago, and 25 installations exist, 20 in China, 3 in Japan and 1 each in Taiwan and Korea."*

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## Comment

WREAN did not advise applicants to:

- check the standard being applied.
- consider that the turbine had not been installed in the UK

The Review Team would have expected WREAN to have sought advice from RBT. In addition, since the applicants were spending considerable sums on this turbine it would have been prudent for them to check the quality of the product.

The statement made by Adman Ltd that the product was designed to meet Chinese national standards, which are, in general, in accordance with IEC

61400-2, does not stand up to scrutiny. There should have been third party certification by a technically competent and independent Certification Body to ensure, as far as reasonably practicable, a product meets and continues to meet a recognised and acceptable standard. Copies of the certification should have been presented with the tender or if not available been requested from Adman Ltd so that the scoring criterion was correctly apportioned.

The point of requiring examples of the turbine being installed in the UK, Ireland or Europe is that wind regimes differ greatly throughout the world. An average wind speed is only a guide to the wind regime and potential performance. For the same average wind speed a location having a statistical distribution of high wind speeds would lead to higher performance and perhaps increased turbulence compared to a location with a more balanced distribution of wind speeds, which would have a lower output. Experience of being installed in the UK or Ireland or elsewhere in Europe is that if installed in a similar wind regime to Northern Ireland the turbine would have demonstrated its suitability.

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### **Efficiency of System**

The turbine with the highest maximum annual output at an average wind speed of 7m/s was awarded the maximum 10 points.

The Jacobs turbine predicted an estimated annual output of 58,325 KW/h as opposed to the 55,270 KW/h predicted by Powerbreeze and was therefore awarded 10 points. The Powerbreeze turbine was awarded 9.48 points based on the following calculation:  $\{(55,270/58,325) \times 10\} = 9.48$ .

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### **Comment**

A weakness in this criterion is that it was calculated at a set wind speed of 7m/s rather than a site-specific speed, which would have been more realistic. WREAN in association with RBT should have followed the advice of the WREAN Board and advised the applicants of the need for site-specific detail. Variances in wind speed should have been considered.

The requirement for the Tenderer to give the maximum annual output at an average wind speed of 7.0m/s does not take into account actual site conditions and differing average annual wind speeds. An assessment and weighting on a standardised basis would not give a true representation of the differences in energy output between competing turbines on individual sites. When completing the Selection Scoring Criteria an applicant would not have had a supplier's estimate for output specific to the site, only the estimate for output at an average wind speed of 7m/s. This exercise had already been carried out for each site's economic appraisal and although applicants commented that a student prepared it, RBT included the estimates in the economic appraisals without caveat. If a request for site specific output estimates had been made mandatory the applicant could have used them as comparison for the supplier's claims. As the suppliers have not returned a

predicted annual energy production figure then a shortfall in output cannot be pursued with the supplier under warranty provisions.

It is recommended that a requirement for a site-specific output estimate is included in future publicly funded wind energy projects.

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### **Experience of Installer**

The Supplier / Installer had to provide the client with evidence of having installed at least 2 similar Wind Turbines in the UK or in the Republic of Ireland and were responsible for the design, supply, installation, commissioning, certification and demonstration of the entire system. Under this criterion it was also stated, “if a contractor cannot prove to have installed at least two similar wind turbines in the UK or Republic of Ireland they will be disqualified”.

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### **Comment**

At the time of tender:

- Adman Ltd had never installed a turbine and there were no Powerbreeze 20kW turbines operating outside of Asia.
- The turbines were being imported by EETS Wind Ltd who had no previous experience of installing turbines. This is the first time they had imported these turbines into Europe.

Adman Ltd was the organisation submitting the tender so if this criterion been applied correctly WREAN and the project applicant should have disqualified Adman Ltd at this stage. Adman should not have been awarded any score under this criterion. No reliance should have been placed on EETS Wind Ltd when applying scores. The Review Team considers that this is a serious error in the administration of scoring by WREAN who facilitated the process and the applicant who accepted responsibility for appointing Adman.

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### **Installer Accreditation**

The contractor will be awarded points on being accredited through Clear Skies or other similar European Programmes:

- 10/10 was awarded if the Supplier / Installer was fully accredited through Clear Skies or other similar European programmes,
- 5/10 was awarded if the Supplier / Installer was provisionally accredited through Clear Skies or other similar European programmes.

It was not a specific requirement for the supplier / installer / product to be registered with Clear Skies, accreditation meant they were awarded a higher

score but they would **not** be deemed ineligible for having no such accreditation.

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## Comment

A discrepancy has arisen in respect of the scores allocated to Adman Ltd/EETS under this criterion. For the project applicants who accepted the Adman Ltd/EETS tender, a score of 10/10 has been awarded with the notation:

*“EETS is fully accredited to a number of bodies as outlined in their tender package. EETS is also provisionally accredited through Clear Skies. Due to their substantial accreditation status they are deemed eligible to maximum awarding points in this section.”*

However for the project applicants who accepted the tender from J.A. Graham the Adman Ltd/EETS tender were awarded 5/10 with the notation:

*“Adman Ltd – EETS is provisionally accredited through the Clear Skies Programme.”*

This is of great concern for the following reasons:

- The tender was submitted by Adman Ltd, there is no formal partnership agreement between Adman Ltd EETS Ltd therefore reliance should not have been placed solely on EETS Ltd’s provisional registration. EETS Ltd did not submit the actual tender.
- EETS Wind Ltd was only established in 2005 and had never supplied or installed the Powerbreeze model before.
- Adman Ltd had no registration and had this criterion been applied correctly their tender should have been awarded zero points.
- It is unrealistic that each applicant would have independently applied the comments when scoring the tenders.
- The five point difference in the two different scores applied for the same criterion was enough to swing the total score in favour of Adman Ltd.
- Full registration of the Clear Skies list should have been mandatory and if installers/suppliers could not prove their registration (proof of registration) then they should have been disqualified. This mandatory requirement would have been an additional mechanism to safeguard DARD’s and the applicants’ investment.

The Review Team has been provided with a copy of correspondence that WREAN issued to Adman after the tenders were scored. Within it WREAN advised that they had studied the selection criteria and awaited the following information:

- Quality of Product – ISO Certificate;
- Experience of Installer – a list of where and how many installations would be suffice;
- EETS installer Accreditation

The most disconcerting comment in this correspondence is:

*“I am sure you can appreciate how important this information is which should have been submitted with the tenders. It is very important that this information is received as soon as possible as grant claims will not be processed otherwise.”*

Four months after this initial request a further reminder was issued to Adman for this information.

This is a serious oversight on behalf of WREAN and an admission that the tender process was carried out inappropriately. This further substantiates the Review Team’s assertion that Adman should have been disqualified at the time of scoring the tenders. DARD must ask why WREAN, being aware that they had acted incorrectly, allowed Adman to enter and remain as one of the installers / suppliers.

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### **Product and installation Warranties**

The Turbine and inverter were both awarded one point for each year they were under warranty up to a maximum of 5 points for each.

The Powerbreeze turbine and inverter both came with a 5-year warranty and the Adman Ltd tender was awarded a maximum 10 points.

The Jacob’s turbine and inverter both came with a one-year warranty so the tender from J.A. Graham was awarded 2 points in accordance with the criteria.

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### **Comment**

The Review Team note that under the Clear Skies programmes the Manufacturer shall provide a minimum of 2 years warranty for both components and inverters. Therefore the Review Team is unclear as to why the minimum warranty period was not set at 2 years.

The requirement for a Tenderer to estimate and warrant an annual output should have been included in the specimen functional specification issued to each applicant. Warranted performance is a major feature of the contracts agreed with the suppliers of large wind turbines and examples exist which could be adapted to suit smaller scale projects. If it had been a specified requirement the Tenderer, presumably, would have submitted a prudent estimated annual output with each Tender Return. This would have given the applicant, WREAN, RBT and DARD a more realistic expectation of the



renewable energy, which could have been achieved. It may also have impacted on the applicant's decision to proceed with the project and would have given the applicant a means of holding the Supplier to account if there was a shortfall in output.

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### **Maintenance back up**

The Supplier/Installer had to provide the client with a 5-year maintenance contract. The maintenance contract had to include annual servicing and routine maintenance over and above that which is covered in the turbine and inverter warranties for at least five years.

The contractor was awarded 5 points for a 5-year maintenance contract and 1 additional point for every year thereafter to a maximum of 5 points. If a contractor could not provide a 5-year maintenance contract they would be disqualified.

Both Adman Ltd and RES supplied a 5-year maintenance contract and were therefore both awarded 5/10.

## **3.28 CLEAR SKIES LIST / SELF REGISTRATION**

### **Background**

The Clear Skies Renewable Energy Grant scheme was introduced by DTI (now the Department for Business Enterprise and Regulatory Reform – BERR). DTI awarded the contract for the management of the Clear Skies scheme to BRE Global Ltd.

The scope and criteria of the scheme is attached at **Annex 10**. From this document, issued on 7 April 2003, it should be noted that:

- The Clear Skies product criteria covers identification, engineering integrity and safety for wind turbine generators  
  
above 0.5kWe (each turbine) at 12 metres per second wind speed for both grid connected and stand alone systems.
- Manufactures / suppliers were requested to give a signed statement that their product complies with the Clear Skies criteria.
- Wind turbine manufactures were asked to confirm that their turbines complied with the turbine criteria.
- Inverter manufactures were required to confirm that their inverter complied with the inverter criteria.

- Manufacturers were expected to provide clear documentation to installers and end users such as installation instructions, maintenance schedule, operation instructions and safety precautions.
- Products shall have been designed in observance of BS EN 61400-2 1996 (or updated version), equivalent national standards such as Germanischer Lloyd rules and regulations or shall have a proven track record of reasonable reliability and a good number of operating wind turbines in the UK.
- Manufacturers are asked to self certify the structural design engineering integrity of their wind turbines. If requested they should be able to demonstrate how various loads have been considered in normal and extreme situations and what safety precautions are put in place.
- Manufacturers shall provide a minimum of 2 years warranty for both components and inverters.

BRE Global Ltd confirmed that the Clear Skies product registration process was based upon self-certification by the manufacturer (or UK Importer) that the products met the published requirements. In the case of wind turbines this was testing to IEC 61400-2.

### **Applying Clear Skies to WERB**

In September 04 under the initial tender process Rural Building Technologies Ltd (RBT) tried to source a list of 20kW Wind Turbines available on the market. The aim was to appoint one installer / supplier for all project applicants.

It was agreed by the Assessment and Technical Panel that “only installers currently on the Clear Skies list will be able to apply for the tender to install / supply turbines.”

The closing date for tenders was 21 Oct 04.

RBT advised the Review Team that focusing on Clear Skies would permit successful project applicants to apply for additional grant aid under the Clear Skies programme.

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### **Comment**

The Review Team consider that the inclusion of the Clear Skies list should have extended further than simply permitting applicants to apply for a Clear Skies grant. Compliance with Clear Skies registration criteria would have provided assurances to applicants. It would seem that neither the workings of the Clear Skies list nor the relevance of it to the WERB project was considered in sufficient detail. Additionally it is apparent to the Review Team that provisional registration was based on a self-certified paper exercise only.

At the time of scoring Adman's tender, and indeed several months later, WREAN had not acquired EETS's certificate of registration with Clear Skies or any other European body. This is a fundamental mistake.

BRE Global Ltd also stated that:

*"Whilst an installation company was provisionally registered, the competency of that company had not been established through an independent technical inspection. To appoint such a company for the installation of a relatively large wind turbine (in terms of Microgeneration) of 20kW would in our view warrant careful consideration".*

Albeit that Adman Ltd was not in a formal partnership with EETS Ltd or EETS Wind Ltd, even if this had existed EETS Ltd were not fully registered until 27 November 2006 which was after the tender exercise had been completed. Most applicants advertised for tender proposals towards the end of 2005.

It would have been prudent to insist that all installers / suppliers had full registration status at the time of tendering and verification from Clear Skies should have been sought from Adman Ltd. Renewable Energy Services provided their Certificate of Registration along with their tender proposal. The existence of this should have alerted WREAN to advise applicants to seek a similar certificate from Adman Ltd.

The Review Team considers that RBT should have provided more guidance on this aspect of the tendering process.

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**Note:** BERR advised the Review Team to insert the following sentence:

*"The Clear Skies Scheme was set up when microgeneration was in its infancy in 2002. It served a purpose at the time but it was recognised that a more robust scheme was needed which is now in place in the "Microgeneration Certification Scheme"*

On the 26 October 04 WREAN advised that only two companies had fully completed the tender documents under the original tendering process.

On the 6 January 05 a decision was taken to introduce a new tendering process to be undertaken by each applicant.

On the 5 August 05, WREAN placed notification in the Belfast Telegraph, Irish News and the Newsletter.

Project applicants then placed adverts in the Belfast Telegraph and the required European Journals.

Adman Ltd ordered the turbines in Dec 05 / Jan 06.

Under the revised tender procedure it was not a specific requirement for the supplier / installer / product to be registered with Clear Skies. WREAN confirmed this to be correct. However, RBT advised the Review Team that Clear Skies accreditation (registration) should have been mandatory in the second tender exercise. RBT advised the Review Team that in the sample tender documentation that they provided to WREAN the need for Clear Skies accreditation was mandatory. RBT advised that they were unaware that WREAN had removed this from the tender documents that were finally issued by WREAN to the applicants.

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### **Comment**

Desk research reflects that RBT were fully involved in the drawing up of the tender sample pack and approved its content before WREAN distributed it to the applicants. RBT's asserts that WREAN changed the content of the pack without their knowledge. The omission of mandatory Clear Skies accreditation, without reference to RBT or the A & T Panel was a serious error of judgement.

WREAN advised the Review Team that had they restricted it to Clear Skies this would have limited the number of potential installers/Suppliers to 2 or 3. Therefore it would seem that WREAN did decide to remove the Clear Skies restriction. However, given that eight potential suppliers/installers responded to WREAN's main tender advert the Review Team does not accept this as a credible argument. The purpose of the project was not to open up the turbine market but to ensure that "proven" technology was available to the applicants. The use of the Clear Skies programme would have gone some way to ensuring this.

Registration on the Clear Skies list resulted in Companies being awarded a higher score but they would not be deemed ineligible for having no such registration.

Adman Ltd was never included on the Clear Skies list and WREAN did not have a copy of EETS's accreditation certificate with either Clear Skies or any other European body.

The Powerbreeze turbine was listed from May 06 to May 07. Project applicants tendered in Aug / Sept 05. The Powerbreeze turbine was not on the Clear Skies list at the time project applicants sought tenders.

Renewable Energy Services was registered on the Clear Skies Installer Registration Scheme. The Registration Number is 2121292, date of certificate was 19 July 2005, and the expiry date was 31 March 2006. Thus Renewable Energy Services was on the list before WREAN placed its advert in Belfast Telegraph.

The Jacobs turbine was also on the Clear Skies List at time of tender.

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An inspection of the Clear Skies Installer List shows that it contains:

Energy Equipment Testing Services Ltd, Unit 2 Glan-Y-Llyn Industrial Estate, Glan-Y-Llyn, Taff Wells, Cardiff, South Glamorgan CF15 7JD.

The list of recognised products includes:

<b>Manufacturer</b>	<b>Type</b>	<b>Name</b>	<b>Desc</b>	<b>Model</b>	<b>Listing Date</b>
Qingdao Anhua New Energy Development Co Ltd (Energy Equipment Testing Services Ltd)	Wind Turbine	Powerbreeze Wind Turbines	Wind Turbines	0.8, 1.4, 2.4, 4.6, 8.8, 11.8, 18.5, 26.5, (Outputs in kW at 12m/s.	21/5/06

The Powerbreeze Model was placed on the list on 21 May 2006 and removed following receipt of a letter from WREAN dated 14 May 2007- Annex 11.

It should be noted that this refers to EETS Ltd and not EETS Wind Ltd despite claims from EETS that they had no involvement in the WERB project.

The Clear Skies Registration scheme has ceased to operate. It has been replaced by the Microgeneration Certification Scheme (MCS) which is owned and operated by the Department for Business, Enterprise and Regulatory Reform (BERR formerly DTI). Applications to join the scheme are submitted to BRE Global Ltd who undertake the approval processes.

### **3.29 AWARDING OF CONTRACTS**

Having completed the Scoring Selection Criteria it was the responsibility of the individual project applicants to award the respective Contract. WREAN confirmed that they provided letters of appointment / rejection. It is noted that the project applicants:

- Signed the "Tender Schedule" selecting the respective company.
- Issued the letter of appointment to the Supplier / Installer

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#### **Comment**

As indicated earlier in this Report, appointment letters were issued to Adman Ltd and not Adman Ltd & EETS or Adman & EETS Wind. If WREAN and the project applicant assumed that a Partnership Agreement was in place the Review Team would have expected that the letter accepting the tender fee would have been addressed to the two companies. It is appreciated that the letters were signed and issued by the applicants but the Review Team

understands that WREAN prepared these letters for the applicants. However, once the applicants sign the letters they must accept responsibility for its content.

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Of the 26 successful project applicants the following Contracts were offered to:

**(i) Renewable Energy Services**

15 x Jacobs 31/20 model

**(ii) Adman Ltd Building & Civil Engineering Ltd**

11 x Powerbreeze 20kW model

Once the applicant awarded the Contract and made the payments, under the terms of the Contract, the turbines were installed.

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**Comment**

There is clear evidence on applicant's files that the grant applicant was involved in the scoring of tender. Whilst the tender process is open to criticism the project applicants must share some responsibility for the problems arising as they issued letters of appointment and rejection.

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### **3.30 SITING OF TURBINES**

The Researcher of the Agricultural and Rural Development Committee raised concerns on the proximity of the windmills to the properties stating that Action Renewables specify a minimum distance between the property and a windmill.

The Review Team contacted Action Renewables who advised that they do not specify a minimum distance that a turbine must be sited away from a property. Action Renewables advised that this was a matter for the DOE Planning Service. Action Renewables advised that each application would be considered on its own merits. Action Renewables referred to the wind turbine at Antrim Hospital which is in close proximity to a Plant Room.

The Review Team note that Action Renewables were represented on the Assessment & Technical Panel who had input in to the development of this project.

Minimum distances were not considered in:

- the application submitted by WREAN,
- the selection criteria for assessment of applications which was drawn up by WREAN and their Technical Consultant.

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## Comment

It appears to the Review Team that under the WERB project the siting of the turbine was a decision that was determined by the applicant in discussions / negotiations with Planning Service. Some applicants had determined the siting of their turbine and acquired Planning Permission prior to submitting their application. In others RBT discussed siting with the applicants.

The Review Team note that the tender pack used by applicants stated that:

*“The Wind Turbine should be located no more than 150 metres from the electrical supply meter”.*

The 150 metres seems to have been related to keeping the cost of cabling etc to a minimum rather than health and safety considerations.

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The Review Team did contact DOE Planning Service and were advised that decisions on individual sitings of turbines would be made at the local Planning Service office. The Review Team notes that on their web site Policy PSU 12 Renewable Energy states:

*“The geographical position of Northern Ireland and its terrain offer favourable conditions for the development of certain renewable technologies. Sites proposed for projects will often be in rural or coastal areas, which the Government recognises to be not only of intrinsic value but also major tourist assets. A careful balance will be needed between the need for renewable resources to contribute to Northern Ireland's energy supply and the need to conserve the environment and amenities of local communities. Harm to the environment, caused by renewable energy projects, must therefore be kept to the minimum.*

## **Wind Energy**

*The following policies have been prepared to guide the development of projects to harness wind power. Policies for other forms of renewable energy projects will be prepared in future.*

*All proposals for wind turbines or wind farms or groups of wind turbines (including any associated ancillary development) will be assessed in respect of their implications for the visual, ecological and historic landscapes; the implications for agriculture; and the safety and amenity of local residents. Conditions will be attached to permissions, as appropriate, to safeguard particular interests. Permission will not be granted to turbine developments within, or in any location, where they would have a seriously detrimental impact on the amenity of an Area of Outstanding Natural Beauty or any area designated for its conservation, scientific, archaeological or historic interest*

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*Permission will be granted for wind turbine developments in any other area indicated in an Area Plan as being of particular landscape, conservation or amenity value if it can be shown that the proposal would not significantly detract from the character of that area.*

*Exceptions may be made for single turbines or small groups of turbines, which are intended primarily to supply the premises of the developer, provided that siting, can be accomplished with no significant effects on the landscape or special character of the area.*

*Particular regard will be had to the degree of visual intrusion and noise disturbance to be expected, and the proximity of existing infrastructure such as airports, power-lines, railways and roads where public safety implications will be assessed. Consideration will also be given to possible loss of amenity through disturbance during site construction; shadow flicker when the turbines are operating and possible electro-magnetic interference with communications, including television reception.*

*Where appropriate, the planning assessment will include the cumulative effects of successive developments within a particular area.*

*In considering proposals, account will be taken of the extent to which development would provide research benefits which will assist the future assessment and consideration of wind energy project”.*

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## **Comment**

The Review Team considers that the siting of wind turbines is an issue, which can be more correctly addressed by DOE Planning Service. In view of the developments on the WERB project the Review Team recommend that DARD write to DOE outlining the safety concerns that have arisen and ask that Planning Service give due regard to this in the development of their Renewable Energy Policy.

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### **3.31 CONFIDENCE IN RENEWABLES**

Given UFU's concerns that confidence in the Renewable Energy Sector had been damaged the Review was extended to cover other wind turbines funded under the Rural Development Programme. Following site visits and discussions with these applicants it was concluded that these turbines are operating satisfactorily and there are no material findings for this Report.



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## **SECTION 4: CONCERNS**

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## **4.0 CONCERNS**

The analysis of the Tendering process, Clear Skies Programme and Scoring Selection Criteria raised a number of concerns for the Review Team. Such concerns were addressed in a series of structured meetings with the key players involved in the project, namely WREAN, Adman Ltd, Renewable Energy Services, Renewable Building Technologies, applicants and DARD. EETS were contacted by phone. The key areas of concern are:

### **4.1 WIND SPEED CALCULATION**

All the Jacobs turbines have returned substantially lower outputs than estimated in the individual “Executive Summaries” on project files. The best only achieving 50% of its initial estimate and the worst 14%. This is a major concern as the turbines will probably not meet the desired payback timescales. Payback for each applicant was calculated on the RBT’s estimate of output, which was prepared by RBT for input into the Economic Appraisal completed by WREAN. This provided justification for the applicants, DARD and EST undertaking their commitments of funds.

It is accepted that the location of a turbine, such as being in the lee of a hill from the prevailing wind or near to trees and buildings has a large effect on a turbine’s output. Therefore the siting of the turbine may have impacted on outputs. However, even after taking this into account there is clearly a large shortfall in output of the turbines compared with what was predicted from the Manufacturer’s data. It was noted that some analysis was carried out by a student employed by RBT, however, by issuing the estimates included in the economic appraisals without caveat RBT is deemed to have approved them.

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#### **Comment**

RBT advised the Review Team that they carried out “site screenings” for each site taking in to account various impediments both in terms of output of the turbine and access to the site. Therefore the Review Team would have expected to see the results of this screening having been translated in to predictions.

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### **4.2 ADMAN LTD’S INVOLVEMENT IN THE PROJECT**

Adman Ltd was incorporated in January 2005.

Upon contacting RBT about possible opportunities, Adman Ltd advised that RBT introduced them to EETS and the possibility of working together on the WERB project. RBT confirmed that facilitation of such introductions is commonplace in their day-to-day work, particularly as the renewable energy sector is so small. However, they advised this is merely a facilitation process and they are not endorsing any subsequent association by the parties concerned.

At a meeting with the Review Team Adman Ltd made the following allegations:

- WREAN and RBT were aware that there was no “formal” partnership agreement between EETS and Adman Ltd.
- Adman Ltd and EETS combined their company strengths and it was agreed Adman Ltd would submit the tender. For example, Adman Ltd had local knowledge but had not installed turbines and therefore was relying on EETS for the requisite experience to ensure connection to the grid.

*The actual tender document stated:*

*“ Adman Ltd Building & Civil Engineering Ltd, through our partnership with EETS Ltd, are pleased to offer the supply and installation of the 20kW Powerbreeze Wind Turbine. The Powerbreeze is suitable for both single and three phase applications and is mounted on a 25m high steel monopole.*

*EETS will provide the turbine supply, accreditation, installation supervision and commissioning and technical support. Adman Ltd will be the local representative of EETS and will supply civil engineering services, turbine erection, electrical connections, maintenance and servicing and whole project management”.*

*“Our collaboration with EETS offers the expertise of an internationally recognised renewable energy company together with the experience and accessibility of a local company”.*

Adman Ltd claims that both WREAN and RBT were aware of their position of not having previously installed turbines and not being registered. However, the proposal to work in partnership with EETS, who were provisionally registered, was considered by WREAN and RBT to be acceptable and that this would meet the requirements of the tender.

Adman Ltd claim that they were told by RBT and WREAN that to make the project work there needed to be two competitors tendering for the work and if this did not happen the project would fail.

Adman Ltd claimed that WREAN actually e-mailed the adverts from applicants to them in advance of their appearance in the paper.

Adman Ltd stated that prior to submitting their tender it was vetted by RBT. Thus the contents had been agreed in advance with RBT. Adman Ltd advised the Review Team that RBT stated they were guaranteed the “three phase” turbines. Therefore Adman Ltd considered that RBT had led and enticed them into the project.

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## Comment

The above allegations, if proven to be correct, seriously undermine the tendering process. It transpires that Adman Ltd installed turbines on the premises of 11 out of the 12 applicants that had a three-phase supply. However, RBT strenuously denied that they had facilitated or vetted the “partnership” between Adman Ltd and EETS.

While Adman Ltd is making these allegations it is considered by the Review Team that they willingly participated in the process. In fact, one could assume that the terminology used in Adman’s tender pack was intentionally vague and misleading.

When the Review Team advised WREAN that there was no formal partnership between Adman Ltd and EETS, WREAN claimed they were “shocked” to learn this. WREAN advised that they did not check this out and would have assumed that a partnership agreement was in place. WREAN assumed there was joint responsibility between EETS and Adman Ltd. Reliance was placed on the fact that a copy of an EETS brochure was attached to the Adman Ltd tender and the fact that the tender document stated they were working in partnership with EETS.

In addition, EETS has advised the Review Team that Adman were fully aware that they were contracting with the newly established company EETS Wind and not EETS. Furthermore, EETS claimed they were unaware that Adman had attached an EETS brochure to their tender document.

The Review Team consider that as WREAN took responsibility for facilitating the scoring exercise they should have discussed the content of the tender from Adman with the applicant in detail. For example, WREAN and the applicant should have:

- Undertaken checks on the status of EETS / EETS Wind.
- Verified the existence of a formal Partnership Agreement;
- Sought copies of EETS’s registration on Clear Skies and any other accreditations they claimed to hold;

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Adman would have been disqualified if WREAN and the applicant had undertaken more robust checks when completing the Scoring Selection Criteria.

If the status of EETS Wind Ltd had been confirmed the scores allocated to the Adman tender would have nil.

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### 4.3 SELECTION OF THE POWERBREEZE TURBINE

Adman Ltd advised the Review Team that RBT recommended the Powerbreeze turbine to them. Adman Ltd claims that they placed trust and reliance on this advice.

The applicants who were suppliers to Moy Park also claim that RBT and WREAN recommended the Powerbreeze turbine to them. They advised that at the meeting in Moy Park, the benefits of the Powerbreeze were discussed in detail. The applicants advised that at this meeting, following discussion and agreeing a reduction in price with Adman, the applicants decided that the Powerbreeze would be the best turbine for those applicants with three-phase supply. Applicants advised that they had concerns about the history of Adman Ltd and the turbine but were assured by RBT and WREAN.

WREAN and RBT refute these allegations. RBT advised the Review Team that at the request of WREAN they did attend a meeting of the Moy Park suppliers and at this meeting they would have made general comments and raised some concerns.

At this meeting RBT recalled advising applicants:

- that none of these Powerbreeze models had been installed in NI or Europe.
- of their concern about the huge deposit that was being demanded.
- they may have said that a mono pole is superior to a lattice and perhaps this could have swayed Project applicants to opt for the Powerbreeze.

WREAN advised that they did not push applicants in any particular direction, adding that there was no incentive to do so and RBT did not persuade project applicants to select the Powerbreeze turbine at the meeting of Moy Park suppliers.

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#### **Comment**

The different interpretation of events causes concern for the Review Team. However, the Review Team was advised that minutes were not taken at this meeting. Thus the Review Team is unable to reach a conclusion.

The Review Team would make the point that the Powerbreeze was installed on the premises of 11 of the 12 applicants that had three-phase supply. This would suggest to the Review Team that applicants had decided, in advance of scoring, which turbine they wanted.

#### 4.4 QUALITY ASSURANCE

On the 5 March 07 H&SE advised Adman Ltd Annex 12:

*“Due to the problems with the turbine blades being thrown off at Mr Campbell’s installation, there are serious doubts that the design / manufacturing standards of the machine supplied and erected at his premises (and the other identical machines erected at other locations) were adequate. This makes it imperative that suppliers comply with their statutory duties and in particular ensure that a valid EC declaration of Conformance is issued by the responsible person. It is therefore essential that no further work on the erection / repair / replacement of blades on the turbines occurs until there is evidence that the problem with the blade has been overcome.”*

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#### **Comment**

It is essential that if the Powerbreeze manufacturer was to supply new equipment, to solve the current problems, that a suitably qualified person is appointed to ensure that the equipment is of suitable quality and meets the requirements as outlined by H & SE.

Neither EETS nor Adman Ltd is well placed to carry out this function. In fact, EETS advised that no quality assurance was undertaken when importing the turbines, which were used under the WERB project. They advised the stipulated timescales for the project did not permit this.

The Review Team views this as a weakness. It would have been prudent for EETS to have appointed a “local” agent to quality assure the batch before it left the manufacturers premises.

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#### 4.5 SCORING OF TENDER PROPOSALS

WREAN confirmed that they were present at the opening of each tender and facilitated the scoring process with the use of their laptop. However, WREAN advised that while facilitating the process they did not encourage Project applicants to select a particular turbine.

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#### **Comment**

The Review Team is concerned that by facilitating this process WREAN may have stepped beyond the bounds of their responsibility. While some applicants welcomed the support others feel they did not have ownership of the process.

In the opinion of the Review Team the grant applicant would not have been an informed buyer and may have faced difficulties in allocating marks applicable

to criterion such as registration/accreditation, history of the company and quality of product etc.

However, it must be recognised that applicants did participate in this process and signed the documents to appoint the supplier / installer.

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#### **4.6 ADVANCE PAYMENT**

Adman Ltd advised that under their terms and conditions for payment that as they were a company in its early stages they sought payment for the turbines in advance. Adman Ltd advised that this was a commercial decision. Adman Ltd did not know the 11 Project applicants and were entering a new field of work, so were not prepared to take a risk. Additionally, EETS advised Adman Ltd that the Manufacturer would not release the turbines without payment.

Advance payments were a concern for some of the project applicants who preferred stage payments and considered withdrawing from the project. Adman Ltd advised that DARD intervened to ensure the number of participants in the scheme remained relatively high. Adman Ltd also claims that “DARD forced their hand and DARD agreed different payment terms for three project applicants”.

DARD advised the Review Team that they became involved following approaches from Adman Ltd and the project applicants. DARD advised they became involved in good faith to facilitate an arrangement that would suit both Adman Ltd and the applicants. DARD advised that they did not force anyone’s hand in helping to resolve the matter.

At a meeting, which the Review Team offered to all the Stakeholders, Adman refuted DARD’s recollection of the situation. Adman advised that:

- DARD approached Adman and did force them to “take on” these three applicants who would only proceed on different payment terms.
- DARD advised Adman that if they did not take on the three applicants the whole project would fall.

The Review Team discussed this with the three applicants and they advised that DARD approached them about the different payment terms. They advised that they had concerns about Adman e.g. only a new company. However, DARD assured them that everything was in order and encouraged them to proceed with the new payment terms.

DARD has subsequently advised the Review Team that they refute the additional comments made by both Adman and the 3 applicants and refer to comments previously made.

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## Comment

The Review Team considers that DARD should not have intervened to discuss or agree payment terms between a private company and its customers, despite its motives being laudable.

As different stakeholders have different recollection of events the Review Team is unable to establish exactly what happened.

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### 4.7 INSTALLATION/COMMISSIONING

The Review Team is very concerned because “On-site Inspection and Commissioning Reports”, were completed by RBT and applicants for turbines that were clearly not operational.

Some applicants advised the Review Team that they were told by RBT and WREAN that they had to sign the On-Site-Inspection report on the day it was presented to them because failure to do so would have resulted in them losing the DARD funding of £15k.

If this is correct applicants were misinformed. DARD may have faced pressures to meet N+ 2 targets but this pressure should not have been unduly passed on to applicants. From applicant’s comments, it would appear that WREAN and RBT pressurised some applicants to “sign off” turbines that applicants were aware were unsatisfactory. The Review Team has no way of substantiating if pressure was exerted on applicants but as with the Letter of Offer where an applicant signs a document they are responsible for understanding the consequences of so doing.

The Review Team understands that applicants may also have been driven by their desire to draw down the grant from DARD. However, in the opinion of the Review Team the applicant and RBT, when fully operational should only have signed off, turbines. Both RBT and the applicants were responsible for the signing off of the turbines as fit for purpose before submitting claims to DARD.

The Review Team is also concerned as to the inconsistent approach applied to the commissioning of the Powerbreeze turbines vs. the Jacobs. Also there is confusion as to what the commissioning process actually encompassed.

In the opinion of the Review Team the commissioning process was a critical stage of turbine installation but there appears to have been a lack of understanding as to who was responsible for this and the checking mechanism for ensuring that it did take place.

Before installers were appointed WREAN’s Assessment and Technical Panel and RBT should have established the commissioning process. This should have been agreed and formed part of the tender.



In respect of the Powerbreeze turbines:

- Adman Ltd advised the Review Team that they were not responsible for commissioning the turbines; it was their responsibility for leaving the turbines “safe” and ready for commissioning.
- Adman issued Certificates of Completion but this does not state that they commissioned the turbine simply that the installation was completed to the satisfaction of the client.
- Adman Ltd advised the Review Team that EETS visited every site to commission the turbines, however, some project applicants could not confirm this. In fact, project applicants often had difficulty in determining who represented which organisation.
- On speaking to EETS Wind they too were not clear as to how the Powerbreeze turbines were commissioned. EETS Wind referred to the Manufacturer commissioning the inverter, a US Agent being involved in the electrical aspect and EETS completing the grid connection.
- RBT advised the Review Team that they did not attend the commissioning of either the Powerbreeze or Jacobs turbines.

This is worrying particularly as RBT indicated that at the Moy Park meeting RBT raised concerns about the Powerbreeze turbine not having been installed in Europe.

Furthermore, because of RBT’s concerns over the Powerbreeze turbine, it insisted that EETS visit China to see the turbines in operation. This occurred in April 2006 which was after the order for the turbines was placed which, in essence, was too late to raise this concern.

RBT advised that attendance at the commissioning of the turbines was outside the scope of their responsibilities. Nevertheless, at the very least, given that RBT had expressed particular concerns about the Powerbreeze turbine the Review Team would have expected RBT to alert WREAN of the importance of commissioning and of the need to safeguard DARD’s and the applicants investment.

Commissioning is further confused by the fact that RBT attended each site with a document called an “On Site Inspection and Commissioning of 20kW Wind Turbine” report. Although RBT advised the Review Team that this was merely a verification inspection report e.g. checking that equipment was on site etc the title of this document gives the report a different connotation/ emphasis. It would seem that DARD and WREAN accepted this as part of the formal commissioning process with DARD duly authorising payment based on RBT's report.

According to TCIR the commissioning process is a physical check to ensure the turbine is functioning satisfactorily. The commissioning should have verified that the turbine would operate satisfactorily.

In respect of the Jacobs turbines:

- RES commissioned all the Jacobs turbines;
- RES submitted a Certificate of Completion to DARD but this does not state that they commissioned the turbine.
- RES subsequently attended each Jacobs site along with RBT and WREAN when RBT's On Site Inspection and Commissioning Report was being completed. It should be noted that this was in accordance with the introductory page of RBT's On Site Inspection and Commissioning Report which states that:

*“Renewable Building Technologies have requested to visit each site **with the installer** to verify the Commissioning of the turbine and ensure that all paper work is in order”.*

RBT did not ensure that the installer of the Powerbreeze turbines accompanied them when they were visiting the Powerbreeze sites and completing the On-Site and Commissioning Report.

RBT's On-Site Inspection and Commissioning Report confirmed that:

*“all practical completion details including installation commissioning certificates and test results are in place”*

Despite this appearing in their report RBT advised the Review Team that RBT did not attend the commissioning of the turbines. All the turbines had been commissioned before RBT and WREAN visited the applicants to complete the On Site and Commissioning of 20kW Wind Turbine Report.

The Review Team consider that RBT should have attended all commissioning and before RBT and the applicant “signed off” the turbines an agreed period of fault free operation (after commissioning) should have existed before the Certificate of Completion and On Site Checklist was submitted to DARD.

A sample of the “On site inspection and Commissioning” report is attached at Annex 13. RBT's representative and the applicant signed off this report. This “signing off” acted as a trigger for the release of the grant payment from DARD to the applicant.

The Review Team advised RBT that that some Project applicants stated that their turbines never worked. RBT responded that the turbines were in “working order” before RBT signed their inspection reports. During the Review it was noted that the turbine output meters indicated that only two of the Powerbreeze turbines showed no output, one where the meter

is faulty and the other where a meter has not been fitted. However output from some turbines is very small, 1 - 2 kWh, which indicates the turbines, generated for a very short time with the meter connected. RBT advised that, in general, there was pressure to have the turbines signed off so that the grant could be paid.

When the Review Team commented that if the turbines were not generating electricity this should have been acted upon. WREAN advised that they viewed this as an issue between installer and manufacturer. Again, this raises the issues of responsibility and accountability.

#### **4.8 DARD PAYMENT OF GRANT**

Two turbines failed before their claims were processed or any grant paid. Consequently DARD considered withholding their grant, the rationale being that the machines were not fit for purpose. "However, following deliberations and representations from the promoters DARD decided to pay the grant, the rationale being:

- The turbines could be fixed under the warranty and / or servicing agreement which formed part of the LOO.
- All the other conditions of the LOO had been met,

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#### **Comment**

The applicant would have been demanding payment from DARD as they had made advance payments to the supplier.

In agreeing to make this payment DARD re-iterated its understanding that this was an issue to be resolved between the applicant and the supplier / installer.

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#### **4.9 MALFUNCTION**

When the first two turbines failed on the 11 November 06 Adman Ltd advised all Project applicants to turn off their turbines. Adman Ltd stated two applicants whose blades subsequently came off in Jan 2007, were reluctant to follow this advice and did not turn them off. This is denied by both applicants who are adamant their machines were in fact turned off.

If the turbines had been left connected then it could have been expected that approximately 2 month's worth of generation had occurred. This could have resulted on outputs of 6000kWh to 9000kWh each. The meters at both Mr D Campbell and Mr P McWilliams have recorded cumulative energy outputs of only 32kWh and 15kWh respectively which are in the range of outputs recorded by other applicants: Hayes 40kWh, S Campbell 10kWh; Wilkinson 2kWh, Carson 0kWh, Collins 3kWh, Reid 59kWh and McCullagh 103kWh.

There is no evidence to support the contention that the turbines were generating beyond the date that the applicants were advised to turn them off.

### **Status of Turbines**

In summary the turbines are categorised:

- Category 1: Total Failures / Non Repairable. These are the four Powerbreeze turbines, installed by Adman, which shed their blades.
- Category 2: Failed But Repairable. These are three of the 15 WERB Jacobs turbines supplied by RES.
- Category 3: Powerbreeze Blades Tied. Adman tied the blades of these five turbines with straps to prevent the blades rotating.
- Category 4: Potential solutions. These are the test turbine modified by the manufacturers and the hybrid arrangement of the original Powerbreeze tower fitted with the running gear of a three phase Jacobs turbine.
- Category 5: 12 Jacobs turbines in service producing lower than predicted outputs.

An assessment of the condition of each of the turbines supplied under the WERB Project was made and details are contained in Appendix 2 of the TCIR Report.

#### **4.10 EETS WIND LTD**

In discussions with the Review Team EETS advised:

- That a separate Company EETS Wind Ltd had been established to import the turbines from China. It was the intention of EETS Wind to import these turbines into the UK even before discussions had commenced with Adman.
- EETS Wind entered into negotiations with Adman Ltd and agreed to supply the turbines to Adman Ltd. There was no partnership in the “formal” sense but rather a contractual relationship between a supplier and its customer.
- EETS advised that Adman was fully aware that it was contracting with EETS Wind Ltd as orders; delivery documents and invoices were issued in the name of EETS Wind Ltd.
- EETS Wind changed its name to Powerbreeze in late 2006.
- On the 28 November 08 EETS advised that EETS Wind and latterly “Powerbreeze” who worked with Adman Ltd on this project will be “struck off” on 16 December 2008. The person the Review Team spoke to did, at first, claim to have limited knowledge of the current status of EETS Wind. He subsequently clarified the issue but the Review Team found this level of knowledge as to the company’s position worrying.
- EETS stated that EETS Wind / Powerbreeze has no assets is being “struck off” because of the money (approx £100k) owed by Adman for the Powerbreeze turbines, not having been paid
- EETS advised it will not take on the liabilities of EETS Wind,

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**Comment**

As EETS Wind / Powerbreeze will soon be “struck off” the chain in terms of supply and contractual obligations will be broken resulting in no direct link with the Manufacturers.

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**4.11 PAYBACK PERIOD**

All the Jacobs turbines have returned substantially lower outputs than estimated in the individual Executive Summaries, the best only achieving 50% of its initial estimate and the worst 14%. This is a major concern, as the turbines will probably not meet the desired payback timescales. Payback for each applicant was calculated on the RBT’s estimate of output, which was prepared for the Executive Summaries and justification for the applicants, DARD and EST undertaking their commitments of funds.

Albeit that the siting of the turbine impacts on the output nevertheless there is clearly a large shortfall in output of the turbines compared with what was predicted from the Manufacturer’s data. It was noted that some analysis was carried out by a student employed by RBT, however, by issuing the estimates included in the economic appraisals without caveat RBT is deemed to have approved them.

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**Comment**

The EA Appraisal prepared by ASM Horwath states:

*“The budget for each turbine is £30,000. Assuming that*

*that electricity produced by the turbine displaced power that would otherwise be purchased from NIE, the annual saving is £4,836 (20kW for 24 hours for 365 days at 30% and 9.2p). Assuming that all of the electricity is produced by the turbine was “spilled” to NIE, the resulting annual income would be £1,577 (20kW for 24 hours for 365 days at 30% and 3p for spilled units?).*

*Taking an average of these figures produces an annual benefit of £3,207, to which annual maintenance and insurance costs totalling £400 need to be deducted. This gives a net annual benefit of £2,807. If the payback period is computed on the basis of these figures, this gives a period in excess of 10 years.*

*It is generally accepted that this is a comparatively long payback period. For example, should grant aid to be available at the rate of 50% of capital cost, this would reduce the payback period to just less than 5 years. Given the risks and uncertainties associated with the installation of a medium sized turbine (at this stage of development in the renewable energy market), it is considered that this demonstrates a need for financial support if the Project is to proceed within the timescale planned by WREAN.”*

The Review Team is concerned that given the poor outputs the turbines will have a substantially longer payback period than estimated in the individual Executive Summaries prepared by WREAN.

It is also noted from the ASM Horwath's EA assumes that each wind turbine has an economic life of 20 years.

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## **SECTION 5: POTENTIAL TECHNICAL SOLUTIONS**

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## **5.0 POTENTIAL TECHNICAL SOLUTIONS**

### **5.1 TEST SITE**

Adman Ltd advised that the applicant's site in Armoy has been allocated as a test site where new blades and other components have been sent over by the manufacturers in a bid to correct the problems.

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#### **Comment**

The Review Team consider that this is not an acceptable solution to the problem because the:

- The tail vane was inadequate in turning the turbine out of the wind, even in light airs. The project applicant has tied a rope to the tail and manually turns the machine out of the wind, then applies the brake. The tail vane has an area of metal missing from it which would reduce the furling moment.
- The manufacturer has not demonstrated furling and braking in high winds.
- The manufacturer has not demonstrated an effective control system in high wind conditions.
- The applicant had to assume liability.
- New parts for the turbine are in storage, on site, and have yet to be assembled.
- A Programme of modification and testing is not available and there is no indication of progress or a completion and the process may run for many months.

The Review Team is very concerned at the lack of monitoring of the performance of the turbine and the safety of the equipment.

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### **5.2 HYBRID SYSTEM**

Adman Ltd advised that they have carried out modifications to a turbine by attaching a Jacobs head to the Powerbreeze tower and having 3 new invertors fitted. The site was chosen because of its geographical proximity to Adman Ltd's office which made performance easy to monitor.

Adman Ltd maintains that if new turbines are imported EETS Wind would have to accept responsibility for quality assuring them. Adman Ltd advised that to attain CE certification, replacement turbines will have to run for at least 6 months and in their view, going down the Powerbreeze replacement route could take another 2 years to resolve.



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## **Comment**

In discussions the applicant advised that while the hybrid model was generating electricity it was not what he had contracted to purchase and was not a satisfactory long-term solution.

Input from the Health and Safety Executive would be required before any of these solutions would be acceptable to the Review Team. In addition all surrounding warranties and servicing would have to be addressed. This option is not recommended as; while good intentioned, it assumes that the supplier takes all design responsibility for the dynamic and static design of the tower and foundations as well as consequential effects on the Jacobs turbine's running gear. The supplier and his Professional Indemnity and Product Liability Insurance companies may have to provide cover for design liabilities for an extended period.

The turbines would have to satisfy the Microgeneration Certification Scheme (MCS) criteria and the installer/supplier would have to be duly registered with MCS.

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### **5.3 FINANCIAL CONTRIBUTION BY ADMAN LTD**

Arising of the monies that they had withheld from EETS Wind Ltd, Adman Ltd advised the Review Team that they had proposed to make a contribution of approx £100k (£10,000 towards each modification) towards the total costs to "roll out" the modifications that had taken place at the test site for the hybrid model to all 11 installations. During the meeting with the Review Team Adman Ltd then advised that this offer was withdrawn.

DARD advised the Review Team that no formal offer was made but in any case this would have been deemed unacceptable. This was because the DSO had advised RDD that the problems that had arisen between Adman Ltd and the project applicants was a matter to be resolved between these parties.

At a subsequent meeting with the Review Team Adman advised that it had been their intention to divide the £100k that they had not paid to EETS Wind Ltd between the Powerbreeze applicants on the basis that this was not their money. However, they added that any costs associated with the hybrid model would have to be deducted from this.

### **5.4 POWERBREEZE TURBINES FIXED BY THE MANUFACTURER**

Qingdao Anhua New Energy Development Co Ltd has been made aware of the problems associated with the Powerbreeze turbines. They have sent representatives to N.I. to assess the problems and undertaken further research in their factory.

On the 16 Nov 06 an urgent meeting took place between Renewable Buildings Technologies Ltd, Adman Ltd, DARD and WREAN at which Adman Ltd stated:

*“that the fault was due to a manufacturing error for which Qingdao Anhua New Energy Development Ltd had accepted full responsibility and would undertake to investigate and put it right under warranty”.*

RBT advised:

*“We are satisfied that the proper course of action has been implemented, responsibility has been accepted in writing and the problem will be corrected under warranty.”*

On the 27 Nov 06 Adman Ltd advised DARD:

- The main communication is between EETS as the importer / supplier and the manufacturer.
- The intention is to replace the blades on all 11 turbines.
- The manufacturer considers it as a “manufacturing batch problem”.
- The manufacturer will send someone over when the new blades are being installed.

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## **Comment**

The above proposed solution does not address the other major contributory cause of the failures; the inadequate speed control of the Powerbreeze turbine. Qingdao Anhua New Energy Development Co Ltd de facto recognised this factor by installing new Control Panels and Dump Loads at Mr Christie’s turbine and have supplied new versions of it, which have not yet been installed.

Despite the recognition of the problem by the Manufacturer, EETS and Adman Ltd the problem still remains almost 2 years later. There is no indication to suggest to the Review Team that the manufacturer will resolve the problem.

To support this assumption EETS Wind is in the process of being “wound up” and EETS advised that they would not be engaging with the Qingdao Anhua New Energy Development Co Ltd as this could place liability upon them.

Adman Ltd advised that they did not enter into a contract with Qingdao Anhua New Energy Development Co Ltd so it would be unwise for them to intervene and assume liability.

Even if Qingdao Anhua New Energy Development Co Ltd were to intervene at this late stage there is no central point of contact to manage the process. The problem is further exacerbated as WREAN is in the process of closure and RBT’s Contract with WREAN is finished subject to final payments being negotiated.

This places the applicants in a difficult position.

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**SECTION 6:  
ADVICE FROM  
TRADING STANDARDS  
&  
DEPARTMENTAL SOLICITORS OFFICE  
PRIOR TO THIS REVIEW COMMENCING**

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## **6.0 ADVICE FROM TRADING STANDARDS PRIOR TO THIS REVIEW COMMENCING**

DARD explained the Wind Turbine situation to Trading Standards who advised that:

*“The issue comes under the Sale of Goods Act under which if a customer purchases a product it must be fit for purpose and of a satisfactory standard.*

*Any issues with regards to the product should be taken up between the consumer and the trader (the person to whom the consumer makes the payment).*

*The advice to consumers is to write to the trader and ask that they make the problem right giving them a deadline. If this is not met it should be referred to Solicitor.*

*In respect of manufactured goods it remains an issue between the consumer and trader. It is up to the trader to deal with the manufacturer under their contract.*

*If DARD provided a grant, it still remains an issue between the consumer and trader”.*

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### **Comment**

The Review Team recommends that if this Report is accepted that DARD advises Trading Standards and seeks advice that could be applied should a similar situation arise again.

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## **6.1 ADVICE FROM THE DEPARTMENTAL SOLICITORS OFFICE (DSO) PRIOR TO THIS REVIEW COMMENCING**

Throughout the difficulties DARD has maintained the line that the correct course of redress is as outlined by Trading Standards. Whilst sympathetic to the project applicants the contracts have been entered in to between applicant and Adman Ltd. Therefore, the resolution of any problems is an issue that should be resolved between the applicant and the installer.

During this time DARD considered that to be overly involved in pursuing a resolution could be misconstrued as an acceptance of responsibility for something that they are not directly liable for.

On 3 March 2008 DSO advised DARD of the following:

*“In these circumstances in my opinion the Department has no legal responsibility for the defective Wind Turbines and I agree with you that the*

*resolution of the problems which have arisen between Adman Ltd and the project applicants who have had problems with their turbines is a matter to be resolved between the project applicants and Adman Ltd.”*

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## **Comment**

Two of the project applicants have commenced legal proceeding against Adman Ltd with the cases scheduled for hearing in November 2008.

It may be prudent to await the outcome of these cases, as liability may be clearly established. However, in meeting with the Review Team Adman Ltd has advised that should the court cases go in favour of the project applicants the company “*would fold/go under*”. Albeit that these two cases should be allowed to proceed through the appropriate legal channel it would appear that this is not a tenable solution for the remaining 9 Powerbreeze applicants.

The Review Team is concerned that at an initial meeting with the Review Team Adman Ltd had suggested that if ordered to pay compensation to these two applicants they intended to use £100k that they withheld paying to EETS Wind Ltd. The Review Team did question the appropriateness of this but at a recent follow up meeting Adman advised that this money was not theirs to use. It had been their intention to divide this money (less costs associated with the hybrid turbine) equally between the Powerbreeze applicants

EETS Wind Ltd advised the Review Team that they paid the Powerbreeze Manufacturer in full for the turbines. Adman advised the Review Team that they withheld the final payment of approximately £100k from EETS because of the problems with the turbines. However, as Adman has pointed out this £100k is not their money.

In the compilation of this Report the Review Team sought advice from the DSO based on the content of this Report. This advice has been incorporated into the Report.

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**SECTION 7: WHAT WENT WRONG?**

**CAUSES**

**&**

**RECOMMENDATIONS**

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## **7.0 WHAT WENT WRONG - CAUSES / RECOMMENDATIONS**

The Terms of Reference require an assessment of what went wrong and the causes. Addressing this will draw out the Review Team's recommendations and the lessons learnt that DARD should consider in the administration /delivery of the 2007 – 2013 RDP and other Programmes.

### **7.1 ROLES AND RESPONSIBILITIES**

Due to the confusion on roles and responsibilities highlighted in this Report and the negative impact of this on the overall project the Review Team recommend:

#### **Recommendation 1**

DARD must examine its relationship with IFBs to clearly determine where responsibility and accountability rests and ensure these are clearly understood and implemented by all stakeholders. DARD must ensure that these are continually reviewed and revisited throughout the lifetime of the respective Contract.

As stated in the EA for this project:

*“The release of funding should be linked to the achievement of key milestones with provision being made to exit and curtail funding in the event they are not met.”*

In future DARD should establish key milestones for each project and agree responsibilities with the IFB. DARD should consider financial penalties should these not be met in circumstances where this would have a detrimental effect on the respective project.

### **7.2. QUALITY CONTROL**

One of the core issues which led to problems with this WERB project was that the Powerbreeze turbines imported from China were, as admitted by the Qingdao Anhua New Energy Development Co Ltd, a faulty batch. The equipment was faulty causing the turbines to over speed and the blades to be thrown, some of which caused serious damage to property. In addition, EETS Wind as the importer should have introduced quality control measures to ensure only equipment of a satisfactory standard was imported into the UK.

TCI Renewables have completed a status report on the turbines, which outlines the faults.



## **Recommendation 2**

The Review Team recommends that DARD inform future IFB's of the need to ensure that installers/suppliers of goods/equipment must be able to quality assure such equipment.

In future if DARD supports the purchase of wind turbines or similar emerging technology, third party certification by a technically competent and independent Certification Body should be mandatory. The Certification Bodies should be accredited with the United Kingdom Accreditation Service (UKAS) or their equivalent.

UKAS ensures that Certification Bodies carry out their activities objectively and diligently. This would lend some protection to stakeholders.

### **7.3. EXTENSION TO CONTRACTS**

WREAN submitted their application in September 2003 and DARD awarded a Contract for WREAN to act as DARD's Agent on 9 June 2004.

The objective was to install 30 x 20kW wind turbines by 30 June 2006. The Contract had to be extended on four occasions. This demonstrates that the timescales were too optimistic and not achievable. The desire by all parties to forge ahead with the project may have led to decisions being taken in haste.

The EA stated:

*"We are satisfied that WREAN has sufficient skills and resources to implement and manage the project, with provision having been made for the recruitment of a dedicated Project Advisor, formation of an assessment panel comprising representatives from each of the relevant organisations and the procurement of external assistance. However, the timescale for the Project is particularly challenging and, despite careful planning and procurement of appropriate resources, we consider that it will be difficult to complete the project by 30 June 2006."*

*"The funder should retain the ability to exit the arrangement and curtail funding in the event that key milestones are not achieved i.e. phase the expenditure and link the release of funding to the achievement of key milestones;"*

## **Recommendation 3**

The Review Team recommend that in future when significant delays in the implementation of a project arise DARD and the IFB should undertake a joint formal review of the project before an extension to a Contract / Letter Of Offer is approved. This review should measure performance against the agreed objectives and targets on which DARD based its decision to support the project / programme. Justification for extending the Contract must be evident.

## 7.4 WREAN'S TECHNICAL CONSULTANT

WREAN employed RBT as their Technical Consultant to primarily assist with the tendering exercise, developing selection criteria and undertaking site visits. RBT appeared to be unclear about their precise role as is evidenced by their claim, justified or not, that they were heavily involved in the initial tender process but not the second stage tender.

WREAN should have sought input from RBT throughout the project.

The role of the RBT and their area(s) of responsibility should have been defined more clearly or at least re-defined by DARD and WREAN following the abandonment of the first tender exercise. In such circumstances the Review Team has difficulty in determining RBTs precise role in the project.

### Recommendation 4

In future roles and responsibilities must be continually monitored and formally reviewed. These reviews and any resultant changes must be formally recorded and agreed by all parties involved. If material changes arise DARD or the IFB should issue an amended Contract.

## 7.5 WERB STAFF

The EA advised that the WERB project was *“an inherently risky project”* which was *“likely to present operational difficulties at a practical level”*. The success of which would be dependent on WREAN's ability *“to recruit an appropriately senior and experienced member of staff”*

### Recommendation 5

The Review Team recognises the importance of developing innovative projects under the Rural Development Programme. This in itself will create risks for DARD. However, where an EA has specifically identified a project as *“an inherently risky project”* DARD should develop an action plan in conjunction with the IFB to mitigate such risks.

If an EA makes a specific recommendation DARD should ensure this is adhered to. Any proposal to digress from this must be agreed in advance with DARD at a Senior level and the rationale for such a decision recorded.

### Wind Speeds

In assessing project applications, average wind speeds were used.

The use of average wind speeds, from the DTI database, applicable to the 1km grid square for the applicant's location without qualification or reference to local effects produced an inaccurate over-prediction of outputs which has left many applicants disappointed with the performance of their turbine and extended the payback period.

The WREAN Board when ratifying the project had highlighted that successful applicants:

*To be fully aware that 20kW wind turbine produces on average some 33% of its rated power and;*

*Wind speeds of individual sites should be monitored to ensure that the project would be viable on this site.*

Applicants should have been made aware of this advice when Letters of Offer were prepared by WREAN and issued by DARD.

Before preparing the Letters of Offer WREAN should have taken in to account any recommendations that were made by either the Assessment Panel or Board thus ensuring that these would be inserted. DARD should have ensured that they received copies of all minutes pertaining to a funding decision before issuing a Letter Of Offer.

Such conditions should then have been explained to the applicants

### **Recommendation 6**

The Review Team recommends that if IFBs draft Letters of Offer for DARD to issue DARD must receive a copy of the minutes of any meetings of Assessment Panels / Boards ratifying the application for financial assistance.

In future, if DARD decides to permit IFB's to issue Letters of Offer DARD must carry out a percentage check of Letters of Offer issued. Under such circumstances DARD must clearly establish at the outset who is ultimately accountable for the content of the offer.

### **Professional Assistance**

The Department issued a covering letter to the Letter of Offer stating:

*"I would advise that you consider appointing a suitably qualified professional in the development of your project"*

In inserting this clause the Department identified a potential risk in respect of a Conflict of Interest.

Having identified this risk, it should have been fully explained to the applicants. Efforts to mitigate the risk should have been undertaken.

WREAN facilitated a training seminar to provide advice to potential applicants on the completion of their applications. It would have been prudent to host a seminar for successful applicants on the tendering process. Roles, responsibilities and potential risks could have been explained.

The EA commented:

*“There is a limited amount of local experience, or expertise in terms of planning, initiating or managing a project of this nature. By definition this is likely to present operational difficulties at a practical level”*

Without such support from DARD and WREAN each applicant was unlikely to be able to identify a suitably qualified professional.

### **Recommendation 7**

The Review Team recommends that the organisation that issues and accepts the Letter of Offer must clearly establish who will explain the terms and conditions to the applicant. It is recommended that this is carried out on a face to face basis or where applicants are receiving similar Letters of Offer under a programme this could be facilitated at a seminar.

Applicants should be encouraged to take time to fully consider the content of a Letter of Offer before signing the Form of Acceptance.

Where professional advice is suggested/ recommended by DARD/IFB the reasons for this should be explained to the applicant. If deemed essential by DARD/IFB this should be regarded as an eligible cost within the overall funding package.

## **7.8 TENDERING PROCESS**

The tendering process became complicated because it was developed in two stages. In the first stage the objective was to appoint a single supplier of a single turbine. In the second stage the onus was placed on the applicant to appoint the supplier of the turbine. The decision to abandon the initial tender process and then transfer the risks to the project applicants became fraught with difficulties.

As the procedures progressed the lines of responsibility became blurred. RBT claimed they had limited involvement and the Review Team has found it difficult to specify their exact role. Work was undertaken by WREAN on behalf of the applicants with the best intentions in mind but the applicant did not have ownership of the process. Consequently the applicants were led through the process but made a basic error in not paying due regard to the documents they were signing off.

It would be the opinion of the Review Team that WREAN and the individual applicants did not adhere to the tendering procedures through the manner in which they completed the Scoring Selection Criteria. Subsequently, the vast majority of the applicants with a three-phase supply opted for the Powerbreeze turbine.

Upon selecting the Powerbreeze turbine the nine Moy Park suppliers entered into negotiations and secured a reduction on the tender fee of £3,300. The two other applicants who selected Powerbreeze were also offered a

reduction. Seeking and securing this reduction indicated their intention to purchase this model.

### **Recommendation 8**

In future when developing programmes of this scale and complexity DARD should seek advice from DFP's Central Procurement Division at the outset advising the IFB and any appointed Consultant accordingly.

In future DARD must ensure that IFBs refrain from directly assisting applicants in completing the Scoring Selection Criteria.

## **7. APPLICATION OF TENDER SCORING CRITERIA**

The Scoring Selection Criteria is directly related to the "Sample" tender documents agreed by WREAN, RBT and DARD.

WREAN and the applicant made basic errors when assessing the tender submitted by Adman Ltd. Key among these was:

- EETS Wind was only established in 2005 and had never previously imported the Powerbreeze model in to Europe or installed it.
- There was no formal partnership between Adman Ltd and EETS Ltd or Adman and EETS Wind Ltd.
- WREAN and RBT did not check the quality standards being applied to the Powerbreeze turbine.
- Adman Ltd should have been disqualified from the tender process because they had not previously installed turbines.
- Emphasis was placed on the EETS Ltd's provisional registration in respect of scoring the Criteria on Installer Accreditation.

### **Recommendation 9**

If Selection Criteria is compiled it should be checked robustly and adhered to. In future projects, responsibility and accountability should be allocated to a named individual to check this.

The Review Team recommends that the organisation issuing the Letter of Offer explains the tendering process to successful applicants.

Under a "programme approach" such as the WERB project the Review Team can see the benefit in providing a sample tender pack to applicants. However, if doing so the Review Team recommends that the content must be sufficiently robust to ensure that it meets quality standards. All criteria must be quality assured by the IFB / DARD. The applicants should be involved in the process to ensure that they have ownership and accept responsibility for the documents issued under their name.

## **7.10 CLEAR SKIES CRITERION**

In the initial tender phase *“only installers currently on the Clear Skies list will be able to apply to for the tender to install / supply turbines”*.

Under the revised tender process it was not a requirement to be registered with Clear Skies.

This change has caused considerable confusion. Adman Ltd and EETS Wind Ltd were never included on the Clear Skies list. Renewable Energy Services was registered with Clear Skies at the time of tendering.

It would have been prudent to insist that those submitting tenders achieved recognised quality standards. RBT should have developed a system to achieve this.

### **Recommendation 10**

The Review Team recommend if DARD supports specialised projects such as WERB, under the new RDP, that DARD and the IFB must ensure that tender documentation includes an element to cover the quality of the product / service and the need for accreditation must be considered. A reputable third party certification body must provide such accreditation.

## **7.11 RELATIONSHIP BETWEEN RBT / ADMAN LTD / EETS & EETS WIND LTD**

Based on discussions with Adman Ltd, RBT and EETS it is evident that discussions took place before tenders were submitted. It is difficult to determine the exact nature of this contact without further in depth investigation.

It is the Review Team’s opinion that Adman Ltd provided vague and ambiguous information in the Tender bid. It is unclear if RBT and EETS Wind Ltd were involved in this. If so, the tender process was undermined.

### **Recommendation 11**

All tender documentation should have been thoroughly checked and the legal/formal status of those tendering established.

The Review Team recommend that in future the organisation issuing and accepting the Letter Of Offer ensures the applicant has the necessary skills to critically assess / verify any tender documentation.

The Review Team is content for an IFB / DARD to facilitate an applicant through the assessment of tender applications. However, the role that the IFB / DARD undertake must be explained to the applicant. In any facilitation process there must be clear lines of responsibility and the applicant must understand that the selection of a tender application is their decision /

responsibility. Applicants must be responsible for the scoring of tender applications.

## **7.12 INSTALLING, AND COMMISSIONING TURBINES**

The process for the receipt, installation, commissioning and signing off was cumbersome. From discussions with those involved there was a lack of clarity on roles and responsibilities. There appeared to be a rush to “sign off” the installation to release the grant aid.

It is considered that some turbines were “signed off” by applicants even though it could not be confirmed that they had actually produced electricity.

The turbines should not have been “signed off” by the applicants until they had been operating satisfactorily for an agreed period of time. This should have been established by DARD, WREAN and RBT at the beginning of the project. DARD, WREAN and RBT should have established clear procedures for signing off the turbines.

### **Recommendation 12**

The Review Team recommend that an IFB / DARD establish clear procedures for the “signing off” process which initiates payment. As appropriate this should include site visits to observe the equipment in operation. The IFB/DARD must fully explain to those associated with a “signing off” the significance of such documents.

## **7.13. MALFUNCTION**

The Report from TCI Renewables covers the malfunction of the turbines in detail and includes the associated recommendations.

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**SECTION 8: OPTIONS TO SOLVE THE DIFFICULTIES**

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## 8.0 OPTIONS TO SOLVE THE DIFFICULTIES

This Report at section 5 identified the “Potential Technical Solutions” which have been implemented to date. The Review Team considers that none of these i.e. (i) Test site (ii) Financial contribution by Adman Ltd (iii) Hybrid system (iv) Powerbreeze turbine fixed by Qingdao Anhua New Energy Development Co Ltd offer a realisable, satisfactory long term solution because:

Technical Solutions Tried To Date	Reason to Discard
(i) Test site	<p>In the opinion of the Review Team the current system where the brake does not work effectively is unsatisfactory.</p> <p>There is no structured approach to monitor the performance of the current turbine.</p> <p>Visits by Qingdao Anhua New Energy Development Co Ltd manufacturers have been haphazard.</p> <p>The link between Qingdao Anhua New Energy Development Co Ltd and EETS Wind the importer would appear to be broken.</p>
(ii) Financial contribution by Adman Ltd	<p>Adman Ltd claimed they made this offer but withdrew it because:</p> <ul style="list-style-type: none"> <li>(a) DARD would not commit to providing match funding;</li> <li>(b) They are being sued by two of the applicants.</li> <li>(c) To make a contribution would in their opinion be admitting liability.</li> </ul> <p>DARD advised that the proposition from Adman was not transcribed in to a formal offer and would not have been acceptable.</p> <p>The Review Team is concerned that Adman proposed using money withheld from its supplier to finance this option. However at a recent meeting Adman advised that it was its intention to divide this money less costs, for the hybrid turbine, equally between the Powerbreeze applicants.</p>

(iii) Hybrid system	The outputs from the hybrid system are lower than anticipated. The applicant is concerned about long term durability of this model and future warranty and servicing arrangements.
(iv) Powerbreeze turbine fixed by Qingdao Anhua New Energy Development Co Ltd	<p>Despite admitting responsibility and providing assurances that the Powerbreeze turbines would be fixed this has not been achieved and in the opinion of the Review Team is unlikely to be achieved.</p> <p>The point of contact for Qingdao Anhua New Energy Development Co Ltd in the UK was EETS Wind. Adman Ltd is not prepared to liaise with Qingdao Anhua New Energy Development Co Ltd because this would be viewed as accepting liability. Adman Ltd advised that in any case it could take Qingdao Anhua New Energy Development Co Ltd years to resolve the difficulties. Many of the applicants have advised that a Powerbreeze turbine would be unacceptable.</p>

## POSSIBLE OPTIONS

Possible Option	Comment
<p><b>Option 1</b> Await the outcome of the Court case(s)</p>	<p>Two applicants are taking Adman Ltd to court. The cases were listed for 5 November 08. If the applicants win their cases it is anticipated Adman Ltd will have to pay damages. Under such circumstances Adman Ltd has advised that they will fold/go under. This will be of no benefit to the other applicants.</p> <p><b>Action</b> Any potential litigation between private individuals and companies is a matter for them and the Department should not, as a matter of principle, get involved.</p>
<p><b>Option 2</b> The applicant accepted the Letter Of Offer from DARD and appointed the supplier (Adman Ltd). The applicant signed off the necessary papers (On site Inspection Report) signifying the turbine had been installed. The applicant therefore bears responsibility.</p>	<p>Adman Ltd did not meet the tender eligibility criteria and should have been disqualified. Scores should have reflected the actual status of EETS Wind Ltd. This should have been recognised by all or any of DARD, WREAN, RBT and the applicant through control and monitoring systems.</p> <p><b>Action</b> Discard this Option</p>
<p><b>Option 3</b> Under paragraph 7.12 of the Letter Of Offer the applicant had to:</p> <p><i>“Fully insure and keep insured the Project and all assets associated with it against all risks appropriate to the business of the Applicant including public and employer liability. Such insurance shall include the full re-instatement value of the project and the applicant shall arrange to have the interest of the</i></p>	<p>The Review Team was advised that as the faults occurred inside the warranty period that insurance could not be claimed and that insurance cover did not cover the problems that have arisen.</p> <p><b>Action</b> Discard this option.</p>

<p><i>Department noted thereon. Satisfactory written evidence that all such insurance cover has been affected shall be supplied to the Department before the final payment of financial assistance is released.”</i></p>	
<p><b>Option 4</b>  Subject to DFP approval, DARD should consider making an offer of an ex-gratia payment to each of the applicants that purchased the Powerbreeze turbines. It should be noted that in such circumstances DARD will be required to present a Business Case to DFP setting out the various options. DFP approval must be secured if any offer is made to applicants. In calculating the amount to be offered DARD must consider how the actions of WREAN, RBT, Adman and the applicants contributed to the problems that arose in this project. Any offer should be on the basis that the applicants abandon any claim against the Department arising out of the project”.</p>	<p><b>Action</b>  The Review Team sought legal advice and it supports this Option “as a reasonable step”. DARD’s Permanent Secretary is requested to consider this Option.</p> <p>If approved, DARD will calculate the sum of the ex-gratia payment.</p>

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## **SECTION 9: CONCLUSIONS**

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## 9.0 CONCLUSIONS

- DARD applied standard BSP procedures in the assessment of the WREAN application.
- The project application met the policy objectives of BSP
- The project was complex because it involved emerging technology and because of the number of organisations and people involved. DARD and WREAN should have taken greater steps to manage the risks outlined in the EA.
- There were obvious pressures under the N+2 Rule, which the Review Team believes led to decisions being taken in haste.
- The tendering process and application of the Scoring Selection Criteria became complicated and tendering was developed in two distinct stages. This led to confusion in respect of roles and responsibilities. Consequently, the Review Team concludes that tendering procedures were not strictly adhered to and the project applicants did not have ownership of the process.
- The project applicants placed too much reliance on DARD and its agents. Many of the applicants made the basic error of not reading and comprehending the Letter Of Offer and signing documents such as the “On Site Inspection Report” without paying due regard to their significance.
- The imported Powerbreeze turbines were faulty on leaving the premises of Qingdao Anhua New Energy Development Co Ltd so regardless of the systems and processes in place it was inevitable that problems would arise. These were exacerbated by the opportunistic and indifferent approach adopted by Adman Ltd and EETS Wind Ltd.
- The systems introduced for the installation and commissioning of the Powerbreeze turbines were inconsistent and poor when compared with that adopted by Renewable Energy Services. In conclusion the Review Team believes DARD should intervene to try and ensure the appropriate closure of this project.
- Adman should have been disqualified from the tendering process by WREAN and the applicants.
- Reliance was mistakenly placed on the role of EETS Ltd whereas EETS advise that it is actually EETS Wind Ltd who imported the turbines into the UK and supplied them to Adman.

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**SECTION 10: KEY RECOMMENDATIONS**

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## 10. KEY RECOMMENDATIONS

Based on the information collated and analysed the Review Team wishes to highlight key findings and recommendations.

### **Recommendation 1 – DARD to make an offer of an ex-gratia payment**

Subject to DFP approval, DARD should consider making an offer of an ex-gratia payment to each of the applicants that purchased the Powerbreeze turbines. It should be noted that in such circumstances DARD will be required to present a Business Case to DFP setting out the various options. DFP approval must be secured if any offer is to be made to applicants. In calculating the amount to be offered DARD must consider how the actions of WREAN, RBT, Adman and the applicants contributed to the problems that arose in this project. Any offer should be on the basis that the applicants abandon any claim against the Department arising out of the project.

DARD should calculate the amount to be offered to the 11 applicants.

Key issues are:

- i. Adman, the supplier, should have been disqualified from the tender process by WREAN and the applicants.
- ii. The contractual responsibility for providing turbines, which are fit, for purpose lies with Adman Ltd and its chain of sub-contractors and this has been accepted. Adman's sub-contractor EETS Wind Ltd who supplied the turbines will be "struck off" on 16 December 08. It was that company which purchased the Powerbreeze turbine and imported them into the UK. Adman is being sued by two applicants who had suffered damage to their properties and Adman has been advised by their legal representatives not to deal directly with Qingdao Anhua New Energy Development Co Ltd, as this will expose them to full liability. Although, Qingdao Anhua New Energy Development Co Ltd, manufacturer of the Powerbreeze turbine has admitted liability, with EETS Wind Ltd about to be "struck off" and Adman declining further involvement it is difficult to envisage who would accept contractual liability to manage the process should Qingdao Anhua New Energy Development Co Ltd visit N.I.
- iii. Problems arose because of the points below or a combination of them:
  - the blades were from a faulty batch, as reported by the manufacturer,
  - the turbines had incorrectly passed the manufacturers quality control checks,
  - or, the turbine speed control system had failed to limit the speed of the turbine to its maximum design speed or a combination of all of these.



iv. TCI Renewables has advised “As supplied and installed the Powerbreeze turbines are clearly not fit for purpose”. They based this conclusion on:

- There is inadequate speed control to reduce speed to keep the turbine electrical output in conformity with its indicated power curve.
- Despite the turbines being isolated, the tails furled and brakes applied, the wind force on the blades overcame the braking force (if indeed the brakes were operational,
- the applicants said that the brakes had backed off and the turbines over sped shedding the blades.
- The furled tail vanes apparently did not keep the turbines turned out of the wind.

The blade mounting design as manufactured was too weak to contain the centrifugal forces when high rotational speeds were experienced on the four failed turbines.

### **Recommendation 2 – Apportioning Culpability to Stakeholders**

As the Report identifies that a number of parties are culpable for the problems identified in this project DARD should consider if it should seek further legal advice on whether it should pursue a remedy from the other parties to seek recovery of any money DARD pays out.

### **Recommendation 3 – Owners of the Jacobs turbines to contact supplier and installer**

In the case of the Jacobs turbines installed by Renewable Energy Services the failed Jacob turbines are capable of being returned to service quickly but for some applicants the cost of repairs is prohibitive because of the low outputs delivered by the turbines. Since the turbines are out of the warranty period unless the applicants can prove that the problem started during the Warranty then the cost of repairs will have to be borne by the owners.

The owners of the Jacobs turbines should contact the supplier and installer to resolve these problems.

### **Recommendation 4 – Turbines which failed but are repairable**

In the case of the Jacobs turbines installed by Renewable Energy Services twelve are operating but three of the turbines have been classed as “failed but repairable”. Details are:

- (i) The Jacobs turbine belonging to an applicant is out of Service following detachment of the vertical drive shaft and coupling key. Hence the energy captured by the blades cannot drive the generator and the brake cannot stop rotation. The turbine in this condition is not producing an output but it is also capable of reaching high rotational speeds in high winds.

The applicant reported that a quotation of approximately £3500 had been made to cover the cost of repairing and putting the turbine back into service. Although Renewable Energy Services thought repairs could be completed at a lower cost.

- (ii) The Jacobs turbine belonging to a second applicant is out of service following failure in June 2008 caused by a fracture of the vertical drive shaft inside the stub tower and detachment of the blades & gearbox. The gearbox etc fell to the ground beside the turbine tower.

A possible failure mode is that the main shaft drive key became loose (similar to (i) above) with the effect of removing any retardation to the rotation of the turbine hub and blades from the generator or the brake; the turbine would then be free to over speed, limited only by the over speed pitch mechanism on the blades.

- (iii) The Jacobs turbine belonging to a third applicant is out of service following reported lightning damage. A protective earth is not apparently fitted. A lightning strike was reported which burnt out the generator and caused damage to electronic controls. The applicant reported that his Insurance Company had assessed that the turbine could be put back into service at a cost of approximately £7000.

These failed Jacob turbines are capable of being returned to service quickly but for some applicants the cost of repairs is prohibitive because of the low outputs delivered by the turbines. Since the turbines are out of the warranty period unless the applicants can prove that the problem started during the Warranty then the cost of repairs would have to be borne by the owners.

- (IV) Each Jacobs Turbine was warranted for 1 year only and each applicant was required by the scheme to contract with the supplier for a 5 year maintenance contract.

**It is recommended that:**

- **The applicant advises the supplier of the damaged turbine, RES and also S Byrne of Frontier Energy (alternative supplier of Jacobs turbines) that**

**notwithstanding the fact that the turbine is outside warranty, in conjunction with the manufacturer a study is undertaken to determine the cause of this failure with the aim of ascertaining the failure mode so as to assess if mitigation work would need to be carried out on remaining turbines to prevent a similar occurrence.**

- **DARD to inform H&SE of the failure of an applicant's turbine under the near miss provisions of RIDDOR regulations;**
- **RES advises all owners of the Jacobs turbines supplied under WERB or other publicly funded schemes that inspection of the drive shaft, couplings and bearing housing bolts is carried out at their next maintenance service.**
- **RES recommends to the applicants with Jacobs turbines that they consider fitting the tower earth bond connections to achieve a minimum resistance of 10ohms to earth (to comply with BS 6651).**

It is only after these actions are undertaken and information on the cause and scale of the problem is identified could DARD consider any intervention.

#### **Recommendation 5 – Value of Powerbreeze scrap metal to be built in to any settlement sum**

**It is recommended that any funds received for scrap metal should be built in to any settlement sum agreed between DARD and the Powerbreeze applicants.**

It should be noted that to remove a Powerbreeze turbine and base down to just below ground level would cost a minimum of £2000 to £2500, depending on the site. This assumes that the components would be sold for scrap value. Scrap metal values are highly volatile so a firm estimate cannot be given.

#### **Recommendation 6 - Site specific output estimate to be included in future energy projects.**

Turbines have returned substantially lower outputs than estimated in the individual Executive Summaries, the best only achieving 50% of its initial estimate and the worst 14%. This is a major concern, as the turbines will probably not meet the desired payback timescales. Payback for each applicant was calculated on RBT's estimate of output, which was prepared for the Executive Summaries and justification for the applicants, DARD and EST undertaking their commitments of funds.

Neither of the Suppliers, Adman or RES warranted an energy output

performance for the turbine supplied under each contract. Without a specific warranty clause in the contract the applicants, if wishing to achieve improved performance would have to rely on the Sale of Goods Act under which if a customer purchases a product it must be fit for purpose and of a satisfactory standard and performance issues should be taken up between the applicant and the supplier.

If a request for site specific output estimates had been made mandatory and included in the specimen functional specification issued to each applicant. Then the applicant could have used them as comparison for the supplier's claims.

If it had been a specified requirement, the WERB Tenderer presumably would have submitted a prudent estimated annual output with each Tender Return. This may have impacted on the applicant's decision to proceed with the project and would have given the applicant and DARD a more realistic expectation of the renewable energy, which could have been achieved and provided a means of holding the Supplier to account if there was a shortfall.

As the suppliers have not returned a predicted annual energy production figure then a shortfall in output cannot be pursued with the supplier under warranty provisions.

**It is recommended that a requirement for a site specific output estimate is included in future publicly funded wind energy projects.**

#### **Recommendation 7 - DARD to report to H & SE concerns on ratchet straps**

Five Powerbreeze turbines have been made safe by strapping the blades to prevent rotation. The ratchet straps are constructed from webbing and are open to the elements and as such are subject to Ultra Violet light, which, in time will degrade the material. TCIR recommend the straps should be changed at intervals to be specified by the manufacturer of the straps.

**It is recommended that DARD should report this to the H&SE as applicants have expressed concerns about safety.** Adman were advised of this and indicated that they would take corrective action. However, they were concerned about liability if they worked on the turbines.

The Review Team has recently discussed this issue with the UFU and Adman and it is understood that Adman will firstly liaise with the UFU and then write to the Powerbreeze applicants requesting permission to remove the turbine heads.

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## **SECTION 11: NEXT STEPS**

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## 11. NEXT STEPS

In the first instance this Report will be forwarded to the DARD Permanent Secretary who commissioned the review for consideration.

The Review Team will also forward a copy of the Report to DARD's Senior Finance Director, Service Delivery Group and Rural Development Division. The Departmental Solicitors Office considered the Report. The Review Team will continue to liaise with these bodies as required.

On the 11 November 08 the Department apprised the Agriculture and Rural Development Committee on the findings of the review in "closed session". A date will be agreed to present the Report to the Committee in "open session".

Upon consideration of the Report the Permanent Secretary will seek a management response from Rural Development Division as the Implementing Division.

DARD will have to enter into consultation with DFP in respect of preparing a Business Case should DARD consider making ex-gratia payments. DARD will keep its Minister appropriately apprised of developments.

If / when the recommendations of this Report and the accompanying Technical Report are accepted the Review Team will agree a Plan of Action with the relevant parties.



Department of  
**Agriculture and  
Rural Development**

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AN ROINN

**Talmhaíochta agus  
Forbartha Tuaithe**

MÁNNYSTRIE O

**Fairms an  
Kintra Fordèrin**