





Introduction

- One common approach to Wind Turbine Delivery for the Industry.
- •A clear set of guidelines for all involved.
- •Stakeholder involvement and buy in.
- •Level playing field for all logistics contractors.



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Risk Management

What is an 'abnormal load'?

'Defined as a vehicle or combination of vehicles having either no load or an indivisible load, which can only be transported by exceeding at least one of the dimensions and/or axle, bogie or total weights authorised by Directive EC 96/53 and national legislation'

For the Renewable Energy Industry

WIND TURBINE COMPONENTS & TRANSFORMERS





Who Benefits?

- Turbine and Transformer Suppliers
- Designers and Consultants
- Civil Engineering Contractors
- Project Teams within renewable energy companies

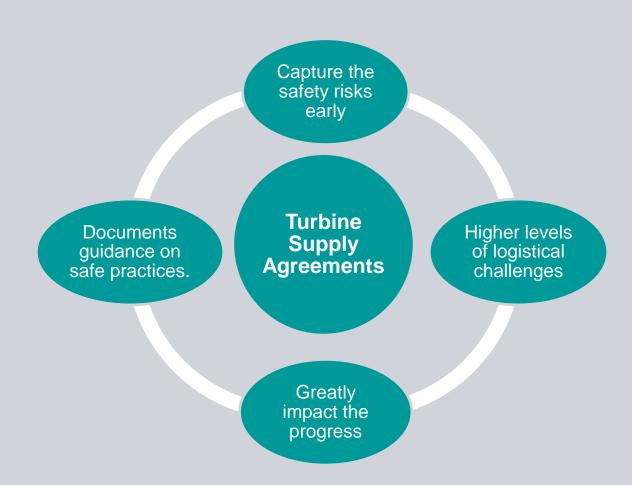


Consideration & Planning

- Previously focus has been on route planning, road upgrades and land negotiations.
- Not necessarily defining how to do it safely
- Traditionally, turbine suppliers dealt with wind turbine delivery
- Changed recently as a more integrated approach has become apparent.
- Site design stage takes into account the requirements for safe component delivery.



Turbine Supply Agreements





Project Planning





Transport Management Plans

Summary

• Summary of equipment deployed, no. of transport runs, route, escorts, delivery times, length of route

Schedule

· Dates, component information

Project Organisation

Roles and Responsibilities

Permits Register

 Register of Permits, hours of deliveries, road closures details, police escorting requirements.

Risk Assessment

 Route Hazards, e.g. Underground and overhead services, black-spots, s-bends, festivals, weather, overhead obstacles.

Point of Acceptance

What happens when the delivery reaches the site entrance.



Traffic Management Plans

Site Familiarisation

 Driver knowledge of site, advance induction, awareness of site rules, site conditions, tool box talks

Planning

 Off site co-ordination, police involvement, delivery notifications, clear corridors, weather windows

Lifting

 Transfer of components from trailers to hardstands, lift plans, AP's, safe working loads, wind speeds, exclusion zones, load bearing capacity, hardstand signed off.

Site Rules

 Break times, tachograph, compliance with hours, WAH, PPE, seat belts.

Incident Reporting

 Contact phone numbers, breakdown and recovery, road based repairs, managing incidents

Maintenance Records

• Truck logs and records of maintenance.

Task Specific MS

 Safe Working systems for each component, anything different about each individual hardstand, further risk assessment



Role of Public Agencies

- Set the legal basis for the movement of abnormal loads.
- Safety of other users is paramount
- Logistics, planning and permitting of these large loads
- Public authorities assist with the practicalities
- Specialist companies assist in processing permit applications
- Many logistics companies manage their own permitting requirements



Escorting Arrangements

Main Functions of Escort Vehicles

- Provide and supply element of control on road users along particular sections of the route.
- Provide an element of warning and information to other road users about the proximity of the convoy.
- Assess and warn of potential hazards.

Advantages

- Provision of essential, immediate data to the abnormal load driver
- •Provides 'rear vision' when required and advises on deployment of rear wheel steering mechanisms
- Assisting traffic control and management

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Escort Vehicles

- Recommended 3 no. escort vehicles with each abnormal load
- Recommended combination of escort vehicles is one vehicle in front, one at rear and one vehicle taking a scouting role.
- May differ when police escort is involved.



Communication

- Effective Communication is critical.
- •Spare radio should be supplied to the police escort.
- •Contingency Plan for dead batteries and malfunctioning radios



Driver Safety & Welfare

- No specific statutory training requirements
- Licence and/or endorsement appropriate to the weight and configuration of the vehicle being driven and equipment being loaded/unloaded.
- Escort vehicle drivers should be fully licensed with appropriate experience and a drivers licence.
- A log of hours worked should be kept and maintained
- •Seatbelts must be worn at all times by all drivers.
- •Drivers must never be under the influence of alcohol or drugs.
- •It is also not permitted to carry alcohol or illegal drugs in the vehicle.
- •Appropriate accommodation must be provided to all drivers.



Incident & Incident Management.

- Encourage a culture of near miss reporting.
- Prompt reporting of any incident (60 minutes) will ensure appropriate response plan
- Emergency response plan should be in place in the event of a serious incident occurring.
- •Specialist advice in load recovery should be utilised where required.

Steps in Incident Management

- 1. Convoy Pilots and drivers may call emergency services
- 2. Incident co-ordinator should be mobilised and present at the scene.



Lessons Learnt

- Drivers moving off the centre of the road.
- •Vehicles becoming stuck and drivers not asking for assistance.
- •Do we have the correct equipment for the task??



