



# Implementation of Behaviour Based Safety in Wind Industry through ABC Model

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**ABSTRACT:** This study focuses on the implementation of Behaviour Based Safety (BBS) in the wind energy sector using the ABC (Antecedent–Behaviour–Consequence) model. Unsafe behaviours, unsafe conditions, and procedural deviations were identified through observation and analysis. The study demonstrates that continuous monitoring and behavioural interventions significantly reduce workplace injuries, improve safety culture, and enhance proper usage of Personal Protective Equipment (PPE). The findings confirm that BBS implementation effectively eliminates at-risk behaviours and promotes an injury-free work environment.

**KEYWORDS:** Behaviour Based Safety, ABC Model, Wind Industry, Safety Culture, PPE

## I. INTRODUCTION

Behaviour Based Safety (BBS) is a proactive approach that focuses on identifying and modifying unsafe behaviours to improve workplace safety. In industrial environments, particularly in the wind energy sector, human behaviour plays a critical role in accident prevention.

Senvion Green Infra, a renewable energy company operating in India, serves as the case study. The company manages wind and solar assets across multiple regions and emphasizes safety management systems.

Key safety practices include:

- Risk identification and mitigation
- Compliance with legal requirements
- Continuous employee training
- Environmental sustainability initiatives

Despite structured safety systems, unsafe behaviours remain a major cause of accidents. Therefore, a behavioural approach is essential.

## II. LITERATURE REVIEW

Behaviour Based Safety (BBS) has been widely studied as an effective method for reducing workplace accidents. It focuses on identifying at-risk behaviours and implementing corrective actions through observation, feedback, and reinforcement.

Studies highlight:

- BBS improves safety performance across industries
- Human factors contribute significantly to accidents
- Training and feedback mechanisms are critical

Research also indicates that:

- Unsafe behaviours account for the majority of incidents
- Safety culture depends on employee involvement
- Continuous monitoring enhances effectiveness

The literature concludes that identifying and controlling at-risk behaviours is essential for developing a strong safety culture.



## III. METHODOLOGY

The BBS implementation followed a structured approach:

### Formation of BBS Committee

A multidisciplinary team including HSE professionals, engineers, and supervisors was formed to oversee implementation.

### Data Collection

Data was collected through:

- Incident reports
- Worker interviews
- Hazard analysis
- Field observations

### Identification of Critical Behaviours

Unsafe behaviours contributing to accidents were identified and categorized.

### ABC Model Application

The ABC model was used:

- **Antecedent (A):** Trigger for behaviour
- **Behaviour (B):** Observable action
- **Consequence (C):** Outcome of behaviour

### Action Plan

Based on findings:

- Training programs were introduced
- Safety communication improved
- Feedback mechanisms established

## IV. RESULTS AND DISCUSSION

The implementation of BBS showed significant improvements:

### Key Findings:

- 40–50% unsafe behaviours identified initially
- 25–30% lack of safety awareness observed
- Majority of accidents linked to unsafe acts

### Improvements Achieved:

- Reduction in unsafe behaviours
- Increased safety awareness
- Better compliance with safety procedures

### Identified Issues:

- Lack of proper feedback systems
- Inadequate training implementation
- Reactive safety approach

### Action Measures:

- Regular safety meetings
- Contractor involvement
- Strict safety compliance
- Enhanced training programs

The ABC model proved effective in analysing and modifying behaviour.



## V.CONCLUSION

The study confirms that Behaviour Based Safety (BBS) significantly improves workplace safety by addressing human behaviour.

Key outcomes:

- Reduction in unsafe behaviours
- Improved safety culture
- Increased employee participation

The ABC model provides a structured framework to analyse and influence behaviour effectively.

Future implementation with continuous monitoring and technology integration can further enhance safety performance in the wind industry.

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