Wind Farm Living EDUCATING THE LAWYERS Series

Lesson 8: Fudging the Wind Data

There is a reason why wind masts are placed where they are.

They are strategically positioned to fudge the data and fake compliance.

This is how…

Wind masts are used to measure wind speed and direction.

Wind speed slows across the wind farm because the blades extract energy from the wind.

The air behind a turbine generates a flow pattern called a wake.

As air is forced through the spinning blades the air is no longer smooth/free flowing air, it becomes turbulent.

The swirling turbulent air is demonstrated in the diagram and video below.

Wind loses power and slows as it passes through the turbines

Downwind

The turbulent air from the first turbine travels on to the next– and then the next – and the next - creating further turbulence.

Each turbine further disturbs the air and further reduces the air speed.

Wind masts located on the downwind side of the wind farm will record slower wind speeds

The video (https://youtu.be/cRVB2i6ZWOU) shows how the “smokey” air slows as it spirals outward.

Upwind / Prevailing Winds

Wake free (clean air) entering a wind farm is the true speed of the wind over the land.

Wind companies uses the clean wake-free air in their calculations.

Masts are located in clean wake free air

They ignore the transfer of turbulence from one turbine to the next.

Downwind

- Slowest wind
- Turbulent spiralling air
- Pulsating pressure waves
- Wake Effect

Blades Effect

- Extracts power from the wind
- Wind is slowed
- Creates air turbulence
- Creates a wake effect behind the blades

Upwind

- Prevailing winds
- Fastest wind.
- Clean, wake free air
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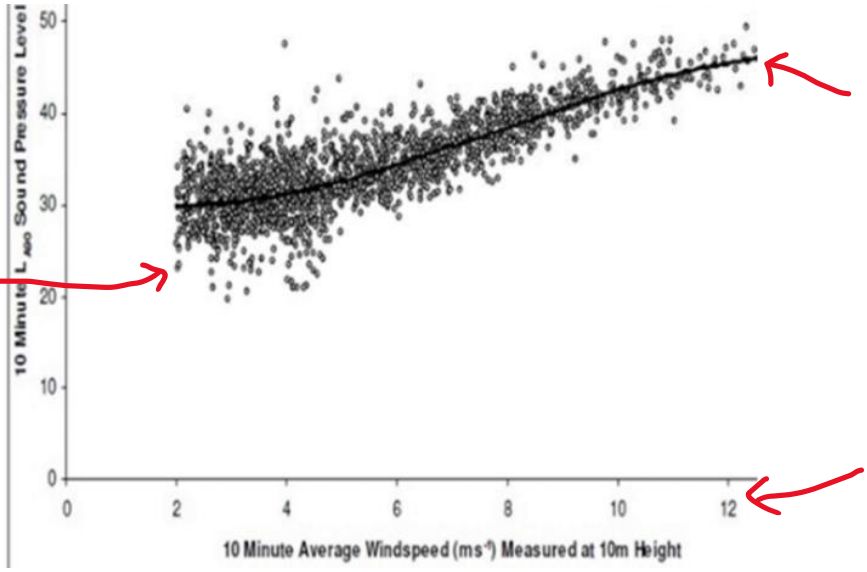
The Graphs allow Higher Noise when the Wind Speed is High

Noise is calculated as a dBLA90(10min) statistical level. It is the dot (data point) on the graph.

A Noise Data Point is the lowest 10% of noise for a 10min period.



Higher Noise is compliant at Higher Wind Speeds

By always using the high wind speed data the wind farm can always claim compliance.

Wind speed (m/sec)

The Graphs Say: **A Fast Wind can have Higher Noise levels for compliance.**

A Slow Wind must have Lower Noise levels for compliance

Wind farms will always make their graphs look compliant for noise because they always use the fast wind speed data – they never allow for the transfer of slowed turbulent air across the wind farm.

The data is never disclosed. No authority requires public disclosure of the data. Without access to the data no one can dispute their graphs. ***Wind companies can fake compliance without question!***

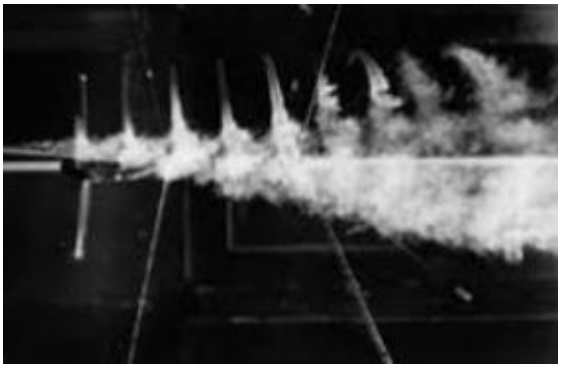
Wind Masts are Located Upwind to Fake the Graphs

Home location

Homes downwind experience turbulent but slower air.

Turbines location.

Turbines are strategically placed in the fast flowing, wake free air located on the prevailing wind side.



Wake Effect behind the Blades

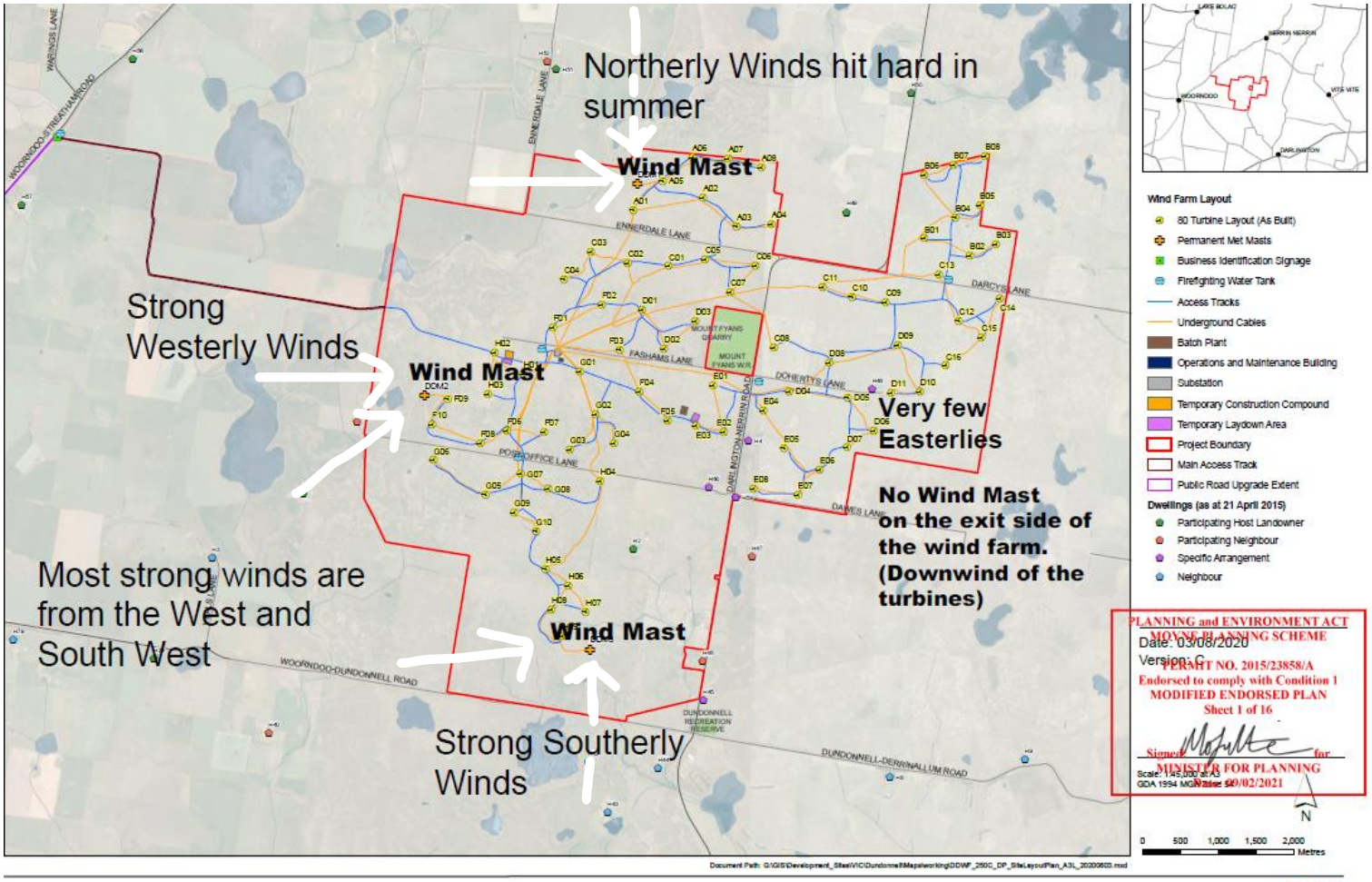
The wake creates turbulence, pulsations, and slower air.

A home with high noise and turbulent winds should generate a non-compliant graph. But the wind company uses the faster wind speeds to push the noise level up the graph – making them look compliant. ***They fake the graphs.***

Wind Masts are located to catch the fast prevailing winds.

Dundonnell Wind Farm map demonstrates the wind mast tactic.

Their wind masts are strategically positioned on the prevailing wind side of the farm – where the free flowing wake free wind data can be measured.



Dundonnell Wind Farm
Site Layout Plan

What does this all mean for the Neighbour ?

1. By using the high speed wind data they can fake compliance.
2. Wind farms will always generate a compliant graph without having to verify their data.
3. The Bald Hills precedent states that:
    - Intermittent and unreasonable noise nuisance can occur at a “compliant” wind farm.
    - Only a Judge or adjudicator can determine if a wind farm is compliant, not an acoustician, nor the EPA , nor the Planning Minister, nor the local Council, nor the Wind Farm Commissioner.
    - Noise nuisance at a home can be demonstrated using subjective evidence such as a “lived experience” diary and extensive documented history of complaints.
    - If the wind company uses the same methodology Marshall Day Acoustics used at Bald Hills, their evidence will be rejected at court.

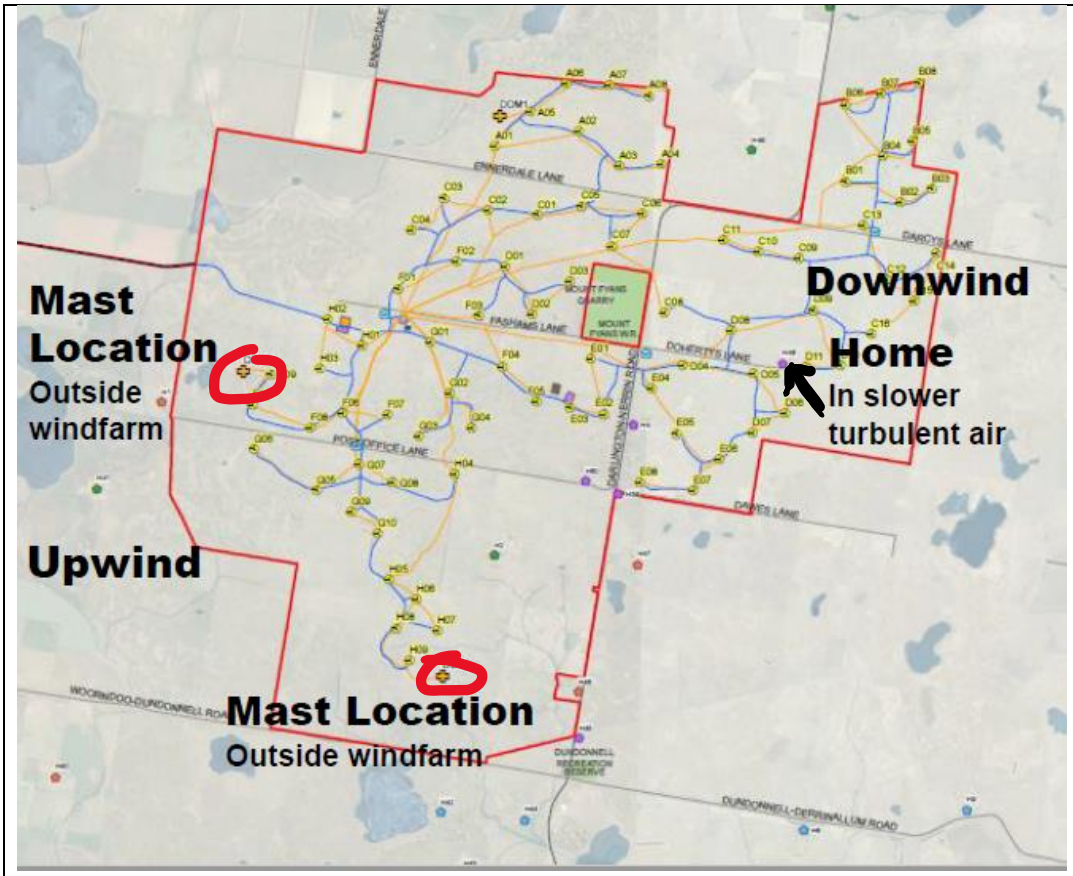
      The Bald Hills Judgement can be found here

A complaint is made at a Home located downwind of the Dundonnell Wind Farm

The Neighbour is vulnerable because they don't have access to the data to check the levels.

Wind companies never disclose the data. Governments do NOT require the data to be validated or verified.

By always using the high wind speed data from the prevailing / upwind side of the wind farm, without considering the transfer of turbulence from one turbine to the next – the high noise levels at the neighbour's home can be dismissed by the company as compliant, because nobody checks the data.



The lived experience of the neighbour affirms the wind farm is noisy.

The graphs should reflect this and show non-compliance.

But the company fudges the wind speed levels and produce a compliant graph.

Their wind data is never verified. Their graphs are always accepted without question.

Where should a wind farms get its wind data?

All nacelles on the turbines throughout the wind farm house wind monitors.

By simply averaging the wind data from the nacelles, an average wind farm wind speed could be obtained.

An ethical wind company would use the average wind speed across the wind farm.

An ethical wind company would make their windspeeds (and noise data) available to the public for scrutiny.

If the industry was regulated, the wind speed and noise data would be submitted for verification.

For the purpose of a Wind Farm's Social Licence - All nacelle wind data should be made available to the public.