

Submission
To
Electricity Authority

Consultation: Promoting reliable electricity supply:
Options to address a harmonics issue.

Subject.

The three options we are consulting on are:

- replacing the existing harmonics standard with more modern, internationally-aligned requirements
- replacing the existing harmonics standard with updated industry power quality guidelines, as a non-mandatory approach
- updating the existing harmonics standard to address its known shortcomings.

Response.

1. Creating a new harmonics standard will not in itself solve the problem. The Electricity Authority needs to audit and carry out investigations and enforcement actions.
2. What is a non-mandatory approach? We need rules and compliance. Not some sort of ad hoc set-up where generators do as they please without accountability.
3. There are no shortcomings in the existing harmonics standard. Just an unwillingness by the Electricity Authority to audit and enforce.

Non-compliant generation does not generate and it certainly does not generate a 50 hertz sinusoidal waveform energy.

Non-compliant generators are producers and they produce a non-compliant distorted harmonic waveform output which

- a) are detrimental to the grid and everything connected to the grid such as equipment, transformers, motors and appliances.
- b) cause hot spots in transformer and motor windings.
- c) degrade transformer oil causing failures. Transformer oil needs to be replaced more often.
- d) alters the characteristics of the grid.
- e) create an unbalanced grid causing rising earth voltages.
- f) provide high THD readings of up to 95% and on occasions higher across the grid.
- g) have caused an excessively high detrimental K factor reading beyond the design of transformers and motors.

It is urgent that the Electricity Authority as the Regulator identify non-compliant generation and take steps to shut it down and commence legal action.

Regards
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